

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The Mining Journal is Registered at the General Post Office as a Newspaper and for Transmission Abroad.]

No. 2397.—Vol. LI.

LONDON, SATURDAY, JULY 30, 1881.

[WITH SUPPLEMENT.] PRICE SIXPENCE PER ANNUM, BY POST £1 4s

**J. R. JAMES H. CROFTS, STOCK AND SHARE BROKER,**  
AND MINING SHARE DEALER,  
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.  
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Bonds (Foreign and Colonial), Railways, Insurance, Assurance, Telegraph, Tramway, Shipping, Canal, Gas, Water, and Dock Shares, and all Miscellaneous Shares.  
Business negotiated in Stocks and Shares not having a general market value.  
Every Friday a general and reliable List issued (a copy of which will be forwarded regularly on application), containing closing prices of the week.

MINES INSPECTED.  
BANKERS: CITY BANK, LONDON—SOUTH CORNWALL BANK, ST. AUUSTELL.

SPECIAL DEALINGS in the following, or part:—  
Almaden, 6s.  
Carnarvon Cop., 21s.  
Colorado, 22½s.  
Devon Con., 23 15s.  
Derwent, 21 5s.  
East Crebhor, 3s., c. pd.  
East Caradon, 18s.  
E. Roman Gravel, 15s.  
East Van, 41 3s. 9d.  
E. W. Rose, off. wntd.  
Frontino, 24.  
Glenrock, 11 13s. 9d.  
Glenroy, 9s.  
Grogwinion, 22½s.  
Herodfoot, 11s. 3d.  
Hington Down, 11 3s.  
Javali, 5s.  
20 Last Chance.  
50 Leadhills, 11 12s. 6d.  
50 Marke Valley, 11 3s. 9d.  
50 Morfa Du, 13s. 9d.  
50 North D'Esreshy.  
150 Nouv. Monde, 21.  
50 N. Penarth, 11 9s. 9d.  
40 N. Wye Valley, 10s. 6d.  
30 Pandora, 11s.  
100 Polrose, offer wanted.  
50 Port Phillip, 8s.  
50 Potosi, 25s.  
25 P. of Wales, 14s., c. pd.  
75 Parys Copper, 11s. 6d.  
50 Pestana, 6s. 6d.  
30 Ruby, 27.  
20 Richmond, 16½s.  
10 Roman Gravel, 11 16s. 3d.  
30 So. Devon, 21½s.  
35 S. Indian Gold, 22.  
10 S. Condurrow, 29½s.  
40 South Darren, 21 5s.  
50 So. E. Wynad, 11 6s. 3d.  
50 S. Penarth, 7s. 6c. p.  
75 Tanker, Gt. Con., 10s. 6d.  
30 United Van Consols  
and Glyn, 5s.  
75 Ditto, pref., 15s.  
75 Walkham Unl., fully paid, 16s.  
35 West Phoenix, 27s. 6d.  
60 Wheel Crebhor, 13 10s.  
15 West Kitty, 25½s.

\* SHARES SOLD FOR FORWARD DELIVERY (ONE, TWO, OR THREE MONTHS) ON DEPOSIT OF TWENTY PER CENT.

BUYER OF CAMBRIAN MINE Shares.

RAILWAYS—SPECIAL BUSINESS.  
FOREIGN BONDS—SPECIAL BUSINESS.  
AMERICAN STOCKS AND SHARES—SPECIAL BUSINESS.  
Fortnightly accounts opened on receipt of the usual cover in these and all Stock Exchange Securities.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.  
ESTABLISHED 1842.

INDIAN GOLD MINES.—SPECIAL BUSINESS in:—

Devala Moyer, Indian Kingdon.  
Devala Central, Indian Phoenix.  
Devala Trevelyan, Indian Trevelyan.  
Devala Mysore, Mysore.  
Devala Glenrock, Oregum.  
Devala Rhodes Reef, South-East Wynad.  
Devala South Indian Gold.  
Devala Tambracherry.  
Devala Wynad Perseverance.

At CLOSE MARKET PRICES, free of commission.  
\* Reliable information given on any of the above. A daily price list issued showing closing quotations. SPECIAL BUSINESS in Frontino and Bolivia (Cape, Ruby, Nouveau Monde, and Richmond).

\* SHARES IN THE ABOVE INDIAN OR OTHER GOLD AND SILVER MINES SOLD FOR FORWARD DELIVERY ONE, TWO, OR THREE MONTHS ON DEPOSIT OF TWENTY PER CENT.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.

**MR. W. H. BUMPUS, STOCK AND SHARE BROKER,**  
AND MINING SHARE DEALER  
44, THREADNEEDLE STREET, LONDON, E.C.  
ESTABLISHED 1867.

BUSINESS transacted in STOCK EXCHANGE SECURITIES and MISCELLANEOUS SHARES of every description.  
RAILWAYS, BANKS, FOREIGN and COLONIAL BONDS.  
TRAMWAYS, TELEGRAPHS, and all the LEADING INVESTMENTS.  
Accounts opened for the Fortnightly Settlement  
A List of Investments free on application.

Mr. BUMPUS has SPECIAL BUSINESS in the undermentioned:—

15 Arenal, 22 15s.  
40 Almaden, 5s. 6d.  
30 Bedford United.  
6 Blue Hills, 22½s.  
60 Bratsberg, 37s. 6d.  
75 Bodidris, 20s.  
25 Colorado, 22 8s. 9d.  
3 Cape Copper, 24½s.  
100 Chontales, 2s.  
20 Copiapo, 22 15s.  
50 Carnarvon, 18s.  
20 Devala-Moyer, 11 12 6  
10 Devon Consols, 28½s.  
30 Devon Friendship, 20s.  
40 Derwent.  
35 East Van, 27s. 6d.  
2 East Pool.  
50 Eberhard, 11s. 3d.  
40 East Caradon.  
50 E. Roman Gravel.  
25 Frontino, 24.  
15 Great Holway, 25½s.  
100 Goodevere, 23s.  
5 Great Laxey, 217½s.  
100 Hungarian Copper, 12s.  
30 Hington Down, 25s.  
50 Indian Phoenix, 11 8s. 9d.  
50 Indian Glenrock, 21½s.  
100 La Plata, 25s. 6d.  
40 Last Chance, 21.  
25 Leadhills, 21½s.  
30 Marke Valley, 11 3s. 9d.  
70 Nouv. Monde, 20s.  
50 New Trumpet.  
60 Parys Copper, 10s.  
10 Penhalls, 23s. 6d.  
25 Panulillo, 45 12s.  
100 Pen-yr-Osredd, 25s.  
150 Port Phillip, 8s. 3d.  
10 Richmond, 16½s.  
30 Ruby, 27.  
75 Rhodes Reef, 17s. 6d.  
75 So. Indian, 22 3s. 9d.  
50 Tankerville, 11s.  
5 Van, 29½s.  
10 Wheel Sisters, 38s.  
40 West Goldolphin, 42.  
50 West Polbreon, 27s. 6d.  
75 Wheel Jewell, 13s. 9d.  
70 Wour. Monde, 20s.

SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.

Mr. BUMPUS devotes special attention to these Securities, and is in a position to afford reliable information and advice to intending investors and others.

IMPORTANT TO INVESTORS.—The position of the TIN market is steadily improving, and in all probability there will be a considerable advance in the price of this metal very shortly.

Shares in SOUND TIN MINES should, therefore, be bought at present prices, as many of them are likely to have an early and substantial rise.

The following are particularly recommended:—  
WHEAL GRENVILLE.  
WHEAL GODOLPHIN.  
WHEAL KITT.  
WHEAL AGAR.  
WHEAL POLBREON.  
NEW TRUMPET CONSOLS.  
NEW PEEVOR.  
WHEAL BOYS.  
NEW KITT.  
GOODEVERE.

WILLIAM HENRY BUMPUS, SWORN BROKER.  
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ESTABLISHED 1867.

**MR. W. TREGELLAS, 40, BISHOPSGATE STREET**  
WITHIN, E.C.

Deals in all descriptions of STOCKS AND SHARES at close market prices, and is always in a position to do business in GOLD HILL, SANTA BARBARA, PITANGUI, and BRAZILIAN GOLD MINES.

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Mr. BUDGE has DEALINGS in:—

40 Bedford United.  
100 Brazilian.  
100 Cherambadi.  
30 Carnarvon.  
2 Carn Brea.  
100 Dingley Dell.  
70 Don Pedro.  
150 Drake Walls.  
110 Eberhard.  
110 East Blue Hill.  
75 East Roman Gravel.  
21 Fongoch.  
60 Gawn.  
100 Gold Coast.  
25 Gunnslake (Clitters).  
35 Hington Down.  
50 Indian Trevelyan.  
110 Javali.  
30 Kit Hill.  
120 Kapanga.  
20 Lead Hills.  
50 Lady Ashburton.  
10 Minera.  
65 New KITT.  
50 New Peavor.  
70 Okel Tor.  
100 Pandora.  
70 Parys Copper.  
100 Port Phillip.  
100 Potosi.  
50 Polrose.  
50 South Devon.  
100 Sentein.  
45 South Darren.  
100 Tankerville.  
5 Tincroft.  
75 Tambracherry.  
100 West Kitty.  
100 West Caradon.  
70 West Polbreon.  
10 Wheel Agar.  
40 Wheel Coates.  
100 Wheel Jewell.

**BRITISH AND FOREIGN MINING OFFICES.**

MESSRS. PETER WATSON AND CO.,  
18, AUSTIN FRIARS,  
OLD BROAD STREET, LONDON, E.C.  
BANKERS: THE ALLIANCE BANK (Limited).

**MESSRS. PETER WATSON AND CO.'S**  
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—STOCK AND SHARE INVESTMENT NOTES—MINES,  
MINERALS, AND METAL MARKETS—SHARE LIST,  
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CHEAP SHARES.  
Read the INVESTORS' GAZETTE.

Shares in all the LEADING GOLD, TIN, COPPER, and LEAD MINES on BETTER TERMS than those advertised.

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**NEW COMPANIES—CAUTION TO INVESTORS.**  
Scarcely one of the many mines introduced during the past few months, and so much puffed up by "Circular-mongers," has been promoted by any MEMBER OF THE MINING MARKET.

Most of the shares are now unsaleable, and with the existing liability cannot be given away. When at 2½ prem., Mr. COOKE was the first to WARN the PUBLIC against EAST WHEAL ROSE.

**NORTH WALES COPPER.**  
A capital of only a QUARTER of a MILLION STERLING is required!!! In order to save loss, those who may have already applied for shares on the exaggerated statements in the prospectus, should withdraw their applications. It is to be regretted that newspaper editors are not independent and fearless enough to discourage such undertakings.

Seek advice before subscribing to any new company from any well known broker or dealer.  
ALFRED E. COOKE, 76, OLD BROAD STREET, LONDON.  
(Established 1853.)

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FOREIGN BONDS, TELEGRAPHS, TRAMWAYS, RAILWAYS, AND  
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Special Business at close prices in all British, Colonial, and Foreign Mine Shares.  
BANKERS: LONDON AND WESTMINSTER.

**WEST KITTY—WEST POLBREON.**  
IMPORTANT MEETINGS OF SHAREHOLDERS.  
Verbatim accounts of the Meetings will be found on page 945.

Mr. REYNOLDS's remarks on these and other Mines will be found on page 946.

**JOHN B. REYNOLDS, STOCK AND SHARE DEALER,**  
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Reliable information procured on moderate terms.

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OFFERS the FOLLOWING SHARES FOR SALE at PRICE AFFIXED, PROVIDED they are NOT SOLD, WITHDRAWN, or PRICE ADVANCED:—

100 Bodidris, 14s.  
100 Drakewalls, 13s.  
50 Friendship, 19s. 6d.  
50 Kit Hill, 21.  
100 Polgoth Gt. United  
17s., or offer.  
110 Stridgong Cons, 12s. 3d.  
5 Ystwith, 18s.  
145 Mounts Bay.  
85 Old Shepherds.  
230 Parka Mines.  
5 Tankerville.  
5 Walkham United.  
50 Lady Ashburton.  
50 Indian Consolidated.  
10 New Wye Valley.  
50 Chilie.  
35 Carn Camborne.  
125 Gt. Southern Mysore.  
150 Indian Kingston.  
15 Olathe.  
100 Tamar Sil.-lead.

Reasonable offers will be accepted.  
Can SELL the following SHARES at prices annexed:—

WHEAL ELIZABETH recommended. Special dealings in the shares.  
40 Bedford Unit., 21½s.  
75 Brazilian Gold, 18s. 9d.  
55 Bulwh United, 37s. 6d.  
20 Carn Camborne.  
25 Carnarvon, 19s.  
30 Devon Consols.  
30 Dev. Friendship, 20s.  
100 Don Pedro Gold, 11s. 6d.  
50 Devon Con., 29s.  
50 Devon Gt. Uni., 30s.  
40 English-Australian.  
100 Exchequer, 3s. 3d.  
25 East Caradon, 21s.  
50 Flagstaff, 10s. 6d.  
50 French Date Coffee, (15s. paid), 9s.  
25 Grogwinion, 22.  
40 Hington Down, 22s. 6d.  
50 Hoover Hill, 21 4s.  
50 Indian Kingston, 20s.  
50 Indian Glen., 21 11s. 3d.  
50 Indian Phoenix, 21 6s. 9d.  
25 Indian Trevel., 11 3s. 9d.  
75 I. X. L., 3s. 3d.  
100 Kapanga, 7s. 3d.  
50 Kit Hill, 17s.  
50 Lady Ashburton.  
50 La Plata, 21 5s.  
50 Leadhills, 21 13s.  
10 Minera, 28 7s. 8d.  
10 Marke Valley, 21 7s. 6d.  
50 New Peavor, 22s. 6d.  
50 Nouvau Monde, 20s.  
50 N. Trumpet Con.  
25 No. Herodfoot, 12s.  
75 Potosi, 21 6s. 3d.  
50 Prince of Wales, 11s. 6d.

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It is a Reliable "Guide," giving valuable information and Sound Advice, &c. It gives Market prices; Dividends upon outlay, when payable; Reports, &c., &c. IT CONTAINS ALL THE SAFE INVESTMENTS IN THE FOLLOWING:—

English, Foreign Railways.  
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Indian, American Stocks.  
Bank, Financial Shares.  
Tramway, Telegraph Shares.  
Municipal Bonds.  
Insurance, Gas, Waterworks.  
Colonial, Foreign Stocks.  
British, Foreign, Colonial Mines.  
Tea, Land Shares.  
Shipping, Dock Shares.  
Miscellaneous Shares, &c., &c.

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AMERICAN and BRITISH RAILS, FOREIGN BONDS, and all STOCKS and SHARES.

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**WE ARE SELLERS OF THE FOLLOWING:—**  
Offers for any portion invited.  
10 Union Trust.  
50 Grey's Brewery.  
40 Organos Gold.  
10 Devonport and Tives.  
45 ton Brewery.  
500 Wheel Jane.  
30 South Darren.  
70 East Craven Moor.  
45 West Craven Moor.  
125 Herodfoot.

**ENDEAN AND CO., 65, GRACECHURCH STREET.**

**TAMAR SILVER-LEAD AND FLUOR-SPAR MINE.**  
The success of this mine is almost a *fait accompli*. Indications in the 27 ft. cross-cut south are favourable for cutting into a rich body of silver-lead at any moment, which will cause shares to rise to 25 or 30 each.

It is therefore not surprising to find parties who have sold shares which THEY CANNOT DELIVER using every endeavour to get hold of them cheaply, and with this object in view "bogus" lots are advertised, and said to be sold by auction at ridiculously low prices. As a matter of fact, no transfers ever come into the company's office for these cheap lots so advertised.

**CAUTION TO SHAREHOLDERS.**—Don't be frightened into selling your shares AT ANY PRICE till the nature of the recent discovery is more fully ascertained.

BUY EVERY CHEAP SHARE YOU CAN GET, but do not part with your money until you receive the certificate. By adopting this course you will frustrate the designs of those who depreciate the value of your property by selling shares at low prices, which they do not and cannot deliver.

**BEWARE OF PEOPLE SEEKING TO EXCHANGE** shares of no value for Tamar.

THE NEW DISCOVERY holds good, the lode being 3 ft. 6 in. wide, producing splendid silver lead, which is much richer in silver than when the lode was first cut into. A sample assayed by Messrs. Johnson, Matthey and Co., on the 2nd inst., gave a produce of 73,500 ozs. of silver per ton of 20 cwts. and 80 per cent. of lead. This is the most valuable discovery made in the district since the days of South Tamar. It is, in fact, the same rich lode which produced over £1,000,000 worth of silver-lead in that mine.

Buyers and Sellers of Tamar should communicate with Messrs. ENDEAN AND CO., Stock and Share Dealers, 65, Gracechurch-street, London, E.C. Established 1861.

Bankers—London and Westminster Bank, Lothbury.

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Also, PITANGUI (Gold), SANTA BARBARA, BRAZILIANS, FRONTINOS, and POTOSI.

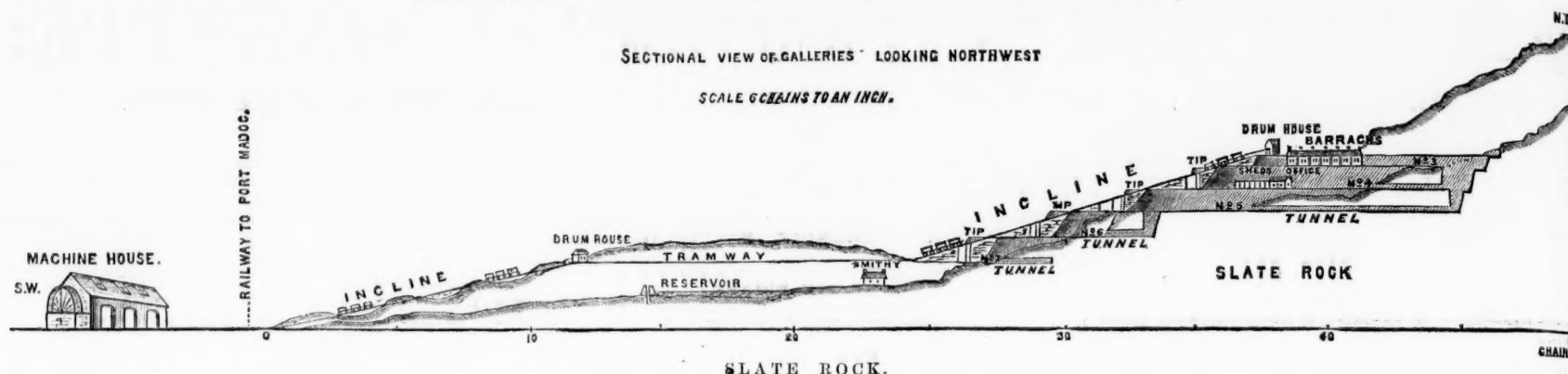
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(18 Years' Experience at the Great Miners and other Mines.)  
CONSULTING MINING ENGINEER, &c.  
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Visits the principal Mines in North and South Wales, Devon, and Cornwall Reports from 25s. and expenses.

SPECIAL BUSINESS in BRITISH SILVER-LEAD and PANT-Y-MWYD MINES, which are daily open to inspection, and will command a good premium, as no doubt exists as to the enormous quantity of rich ore they contain Gold, Silver, Lead, Copper and Tin Mines and Collieries, supplied with Machinery, Plant, Materials, and Stores of every description. Prices on application.

Applications for the 6039 shares offered should be sent in not later than the 8th proximo.

## PRINCE OF WALES SLATE QUARRY.



# THE PRINCE OF WALES SLATE COMPANY

(LIMITED).

Incorporated 24th June, 1881, under the Companies Acts, 1862 to 1880, with Liability Limited to the amount of the Shares subscribed for.

Debenture Capital (bearing interest, payable out of profits only, at the rate of 5 per cent. per annum) £15,500.

SHARE CAPITAL £50,000, IN 10,000 SHARES OF £5 EACH.

£1 per Share payable on application, and £2 10s. per Share on allotment.

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CHARLES BARTON, Esq., J.P., Holbrook House, Wincanton.  
JAMES HEAWOOD, Esq., 46, Longton Grove, Sydenham.  
THOMAS J. LAMBERT, Esq., 59, Bishopsgate Street Within, E.C.  
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### BANKERS.

The ALLIANCE BANK (Limited), Bartholomew Lane, London.

### OFFICES.

ST. CLEMENT'S HOUSE, CLEMENT'S LANE, LONDON—AND PORTMADOC, NORTH WALES.

The Prince of Wales Slate Company (Limited) has been formed for the purpose of acquiring the undermentioned Properties:—

#### PRINCE OF WALES SLATE QUARRY.

This quarry is situated 11 miles from Portmadoc, has been developed by open workings at an outlay of £31,000, and is provided with plant and machinery for carrying on a large business. The slate veins traverse the whole length of the property—three-quarters of a mile. Seven galleries, each 18 yards in depth—altogether 400 yards in length—have been opened on the eastern vein. There is unlimited tip for rubbish beyond the slate veins, and no lifting or pumping machinery is required, the galleries being commanded by levels.

Several thousand pounds worth of slates have been manufactured and sold from this quarry. It has, however, lately been found that finer slate rock exists immediately to the west of the present openings, and by extending the workings westward on this new vein it is estimated that an output at the rate of 3000 tons of slates per annum will be reached by the end of the second year, which, after payment of interest (£775) on the debentures, will give a return of 6 per cent. per annum on a called up capital of £35,000. From the second year, it is believed, the returns will increase by the end of the fourth year to 6000 tons per annum, and should ultimately reach 10,000 tons of slates and slabs per annum. The profit on this make may be taken at £1 per ton, and £1 5s. per ton respectively.

Operations have been commenced on this western vein. Favourable reports upon the property have been made by the late Mr. John Francis (for many years manager of Lord Penrhyn's celebrated quarry), Mr. D. C. Davies, F.G.S., of Oswestry, and Mr. John Roberts, the late manager of the quarry, and now of Pen-yr-orsedd Quarry, Nantlle.

In addition to these reports, Mr. F. Bathurst Henderson, C.E., F.G.S., Consulting Quarry Engineer, has recently made a thorough inspection of the quarry and district, and estimates the quantity

of slate rock contained in the western vein, down to a depth sufficient for 13 galleries, at 15,000,000 tons, which, taking a yield of only 5 per cent. of dressed rock with an output of 10,000 tons of slates and slabs per annum, would last for 75 years, a much longer period than the term of the lease.

#### GORSEDDA SLATE AND SLAB QUARRY.

This quarry is situated 8 miles from Portmadoc, has been extensively opened out by former proprietors at a cost of about £80,000, and contains a large and well proved vein of slate rock of good quality. Eight galleries have been laid out with the necessary roads and incline for conveying the produce down to the Gorsedda Railway. A tunnel 169 yards long has been driven on the course of the slate vein, with two cross tunnels (total length 100 yards), under the lowest gallery, and from the position of the quarry (on the side of a steep mountain) two lower galleries could be opened below the tunnel. There is ample tiproom for the debris.

It is proposed to sell or lease this property.

#### RAILWAY.

The Gorsedda Railway, constructed and maintained by an independent company, under the powers of a special Act of Parliament, runs through the properties direct to the slate shipping port of Portmadoc, having also connection there with the Cambrian Railway, thus affording easy means of transit at the rates fixed by the Act.

Taking the yearly make of slates and slabs from the Prince of Wales quarry at 6000 tons, when the new vein is fully proved and fairly opened on, which, it is believed, will ultimately be increased to 10,000 tons, as there are facilities for almost un-

limited extension, the profit may be estimated on the following basis:—

6000 tons of slates and slabs of the average value of (say) 60s. per ton	£18,000 0 0
Deduct cost of quarrying rock and slate and slab making, £1 per ton	£6000 0 0
General & quarry management, carriage to shipping port, wharfage, rates and taxes, discounts, wear and tear of machinery, and incidental expenses	4750 0 0
Quarry development fund (annual)	1250 0 0=12,000 0 0

Leaving a profit on this make (6000 tons per annum) of £6,000 0 0 which, after providing £775 for interest on the debentures (£15,500), gives a return at the rate of 15 per cent. per annum, on the capital to be at present called up (£35,000), or 10 per cent. per annum on the total capital (£50,000).

Exceptionally favourable terms of purchase have been arranged, the price paid by the company for the properties being £30,000 only, of which £15,500 is taken in debentures bearing interest at 5 per cent. per annum, payable out of profits only, and £11,862 in partly paid-up shares.

The full Reports on the properties can be seen at the offices of the company.

Applications for shares must be made on the form enclosed with the Prospectus, and accompanied by a payment of £1 per share on each share applied for.

Prospectuses may be obtained of the Secretary at the Offices of the Company, or of the bankers.

## IMPORTANT WELSH COPPER DISCOVERY

## THE NORTH WALES FREEHOLD MINES AND SMELTING COMPANY.

The exhibition of specimens of ore at the London Offices of Mining Companies has frequently been announced, but it is seldom indeed that shareholders have the opportunity of seeing before they subscribe samples of several tons of the minerals from which their profits are to be obtained; the North Wales Freehold Mines and Smelting Company forms an exception, for during the past week nearly 5 tons of minerals from the property to be acquired has been on view at the company's offices in Bartholemew House, City, and has been inspected and admired by a large number of persons. The ore, which is in stones varying in size from a few ounces to several hundredweights, is of a quality seldom seen from British mines, and of that character which miners regard as most likely to be permanent; it is a rich sulphuret (copper pyrites), embedded in an attractive-looking ferruginous quartz, and as some of the stones also show the same sulphuret in clay-slate it is evident that the lode from which it is taken is at a junction of strata—a position universally recognised as favourable for the production of riches.

The regular and systematic development of the mines has been carried on by the vendor for the past three years, and the results are all that could be desired. The lode, which runs north and south, is according to the report of Mr. John Lean, who is well known to the readers of the *Mining Journal*, strong and masterly, cutting through the cleavage of the rock, and can be traced through the entire length of the sett, which is about half-a-mile. No. 2 opencast is down 27 fms. Here the lode is 7 ft. wide, and appears to be more settled as depth is attained, carrying two regular well defined smooth walls, and will produce sufficient ore to pay for working. This trench is 6 fms. long, showing good ore in each end. At a point 20 fms. from surface a level is being driven north on the course of the lode, with a view of getting under the large deposit of gossan seen on the outcrop near the quarry; there are 25 fms. more to drive to reach it. When it reaches the point referred to a good deposit of copper will be met with. Since this report was written Mr. Lean's anticipations appear to have been realised, for writing quite recently—in fact, just before Prof. Ramsay's visit to the mine—Mr. Robert Morris, M.E., says:—"I find great progress has been made in the surface works. You have here a most efficient plant, comprising all that will be requisite for some time to come. Few if any of our great mines are more adequately supplied in this respect. No. 1 sump is looking exceedingly well, a capital run of ore being present. In a few days you will have a considerable piece of ground ready for stopping in the direction of No. 2 sump, south level, where the same run of ore is seen in increased bulk and concentration, which will alone far more than pay the working expenses. The present appearance of No. 2 sump is very satisfactory. You are here in the deepest part of the mine. The lode is strong and well defined, and full of ore throughout, and I have no doubt whatever that the harder you work here the greater will be your dividends. In February, 1878, I spoke very assuredly of the value of this property. I have since seen many important mines, and my opinion of the intrinsic worth of these mines is considerably augmented, and I look with great interest upon their immediate future." Mr. James Nancarrow reports quite as favourably as Mr. Morris on the appearance of this sump, for he says:—"From No. 2 sump south workings at the 30 fm. level the south end has been driven 60 ft.; we have the same run of ore as in No. 1 sump, before referred to, each rib being richer, stronger, and more fully developed. The 30 fm. level north is driven 80 feet. The vein is formed, and shows strong indications of approaching the great deposit of ore under the 54 ft. outcrop, from which you will reap an immense harvest of wealth. I may add here that I have never seen in all my experience a deposit of this kind which has not carried out the opinion I have expressed. No. 2 sump has been sunk 10 fms. below the 30, and is 36 ft. long where the lode is, from the lying wall, 8 ft. wide, and in these workings the vein is full of ore throughout, as well as at each end."

The advantage of the shareholders possessing the freehold of the property they work is self-evident, and it will be seen from the prospectus that all the work of prospecting, boring, and the other extensive labour of searching for the lodes has been already performed; the whole estate has been tested in every part, and found to be absolutely impregnated with minerals and mineral substances, while the position of each lode has been clearly ascertained. Everything, moreover, appears to be in full working order, and the purchase includes the cottages and the workshops on the estate, together with the valuable and expensive machinery already mentioned, engines, boilers, boring machines, and apparatus for dressing and reducing the ores, with ample plant and stores. The mines are well placed for convenience and economy of working, and possess excellent facilities for shipping at Conway as well as for transport by railway, and it is remarked that the mines also enjoy the advantage of being in a neighbourhood where labour is exceptionally cheap and abundant. It is a matter of notoriety that the Welsh miner is content with far less wages than his brethren in Cornwall or Devon, or any other of the great mining centres, while the close proximity of the port of Conway to Liverpool gives the command of a large amount of Irish labour.

From the character of the mineral as a copper ore those interested might probably be contented with it for that metal alone; but it seems that the ore also contains silver and gold in quantities worth consideration. The prospectus remarks that there is a large field for the company's operations later on, should it be determined by the shareholders to erect smelting and concentration works, in order to obtain the full amount of the gold and silver, which is met with in unusually large quantities in the ores raised in these mines, and to avoid the great waste and loss of profit involved in the system which at present prevails throughout the country. According to the results given by even the present defective system, the silver per ton of ore is upwards of 33 ozs., and the gold upwards of 10 dwts. These figures have been arrived at after careful assays of the ores, and are vouched for by Messrs. Johnson and Son, the assayers to the Bank of England and Her Majesty's Mint. It is scarcely necessary to point out the large additional source of income which this presents itself in the sales of the precious metals, apart from the ordinary sales of the copper ore. It is now known that, by a recently discovered process, the gold and silver can be easily and simply extracted. There are valuable lodes of lead on the property. These lodes have been opened up, and can be worked at a profit; but the main present business of the company is the working and sale of the very rich copper ores. With regard to the produce of the precious metals just mentioned it has been remarked that Australian and Californian experience has proved that in the practical extraction of the gold and silver 5 dwts. of the former and from 2 ozs. to 3 ozs. of the latter well covers cost; hence, as soon as the company are ready to smelt their own ores their profit per ton of ore will represent about 30 per cent. of copper, which at only 11s. per unit would yield 167. 10s.; about 30 ozs. of silver at 3s. 6d. per ounce = 47. 15s., and 5 dwts. gold = 19s.; together 227. 4s. per ton profit, so that a comparatively small monthly output would quickly repay the entire nominal capital of the company—a circumstance which accounts for the willingness with which the vendor has guaranteed a minimum dividend of 20 per cent. per annum for the first year, by which time with only moderate energy everything will be in full working order.

All that appears to be necessary to ensure brilliant success is energy and perseverance for the necessary exploratory and preliminary work, and the company have abundant working capital and well selected officers. Capt. James Nancarrow says that the strata are all that can be desired. Mr. Martin Boudry remarks that "you have not here to deal with mere superficial indications . . . but on the contrary you have here a rare combination of junctions ensuring richness and depth of origin . . . and the property as a whole is a most desirable one in a commercial sense." The views of Messrs. Paynter, Walter Eddy, F. J. Evans, J. Howans, J. Lean, and others who have examined the property are equally encouraging. The opinion of the director of the Geological Survey was fully noticed last week. As the ore at the company's offices has been taken indiscriminately from the mines, full confidence may be felt that this estimate will be realised, even without consideration of the well-known

fact that mineral almost invariably increases in value with the depth of the mine.

[Since the above was written, a telegram has been received by the secretary from the mines, stating:—Several blasts made during the night in newly-discovered champion lode. Keep exhibition and share list open a few days, and invite the mining world to inspect samples we can forward; they are of the richest and most extraordinary description ever beheld.]

## WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS,  
MINEOWNERS, STOCK AND SHARE DEALERS, &c  
1, ST MICHAEL'S ALLEY, CORNHILL, LONDON.

Nearly twenty years ago the weekly information which had previously been published for a great number of years in *WATSON BROTHERS' Mining Circular* was transferred to the columns of the *Mining Journal*, with the following announcement.

In the year 1843, when mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843; by Mr. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with Statistics of the Mining Interest, published annually in the *Mining Journal* for 21 years, &c. &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring the success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and sharedealing than there is at present; and from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services and advice to all connected with mines and mining.

Messrs. WATSON BROTHERS are daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

The great extension of mining business, the difficulty so often complained of by country shareholders in getting accurate and disinterested information as to the state of Cornish and Foreign Mines, and of the financial and real position of mining companies generally, have induced Messrs. WATSON BROTHERS to make their Circular now published in the *Mining Journal* more extensively known, and to state—

That they issue daily to clients and others who apply for it a Price List (as supplied to most of the London and country papers), giving the closing prices of Mining Shares up to Four o'clock.

They also buy and sell shares for immediate cash, for the usual fortnightly settlement in all Mines dealt in on the Mining and Stock Exchanges, at the close market prices of the day, free of all charge for commission. They deal also, on the same terms, in the Public Funds, Railways, Telegraphs, and all other Securities dealt in on the Stock Exchange.

Having agents in all the mining districts, they are constantly getting mines inspected for their own guidance, and will also obtain special reports of any particular mine for their clients, for the inspecting agent's fee of £2 2s.

Messrs. WATSON BROTHERS take this opportunity of stating that on July 1 they took into partnership Mr. H. J. DEAN, who has been for a number of years associated with the firm, and Mr. W. H. WATSON, who has had some years experience of practical mining and engineering in Cornwall, and is the son of the senior partner. The firm will still be called that of "Watson Brothers."

The number of weekly communications received from almost every part of the world in regard to remarks in this Circular indicate so plainly how much they are read (and, we trust, appreciated) that they will be continued by the same writer.

Indeed, while new blood is introduced to attend to the more laborious and mechanical details of the business, the old will have more time to devote to their different departments.

There is "limited liability" and "unlimited liability"—for instance, if a mine is divided into 20,000 shares of 17. each fully-paid up, no further liability can attach to a shareholder. This is "limited liability" proper. Then there are mines called "limited" with only a small amount of the capital paid up, and anyone registering shares in his name becomes liable at once for all that is unpaid. This is "unlimited liability" improper, and in our opinion is far worse than the Cost-book System, though it may suit some persons to be constantly digging at the latter, and warning their friends against it. Under the Cost-book, if properly conducted, and we see that ours are so, no debt of any consequence can accrue; and as a safety-valve against liability any shareholder can, at any time relinquish his interest, and free himself from all further liability. Thus, say "A" holds 100,000th shares in Wheal Unfortunate, and the "unfortunate" is in debt 1000l. "A" is anxious to free himself from all responsibility, present and future, and does so by writing to the purser, relinquishing all his interest in the mine, and by paying his proportion of the debts. This on 100,000ths would be at the rate of 3s. 6d. per share, or 177. 10s. If the machinery on the mine is worth more than 1000l. he would receive more than he paid, and be entirely free. As illustrative cases, one of Cost-book and one of Limited Liability, let us take two mines in Devonshire, mines adjoining each other—Wheal Crebor and Devon Great Consols. The former is a Cost-book mine in 12,000 shares, and paying dividends; but supposing, for the sake of argument, that the mine, which we hope will never happen, should become poor, then any shareholder could at once free himself from all liability by relinquishing his shares, and receiving his proportion of the value of the machinery. Devon Great Consols is in 10,240 shares of 5l. each (Limited), but with 17. only paid up. Thus the registered shareholders are liable, if ever money is required, for their proportion of over 40,000l., and cannot escape it. Yet this is the boasted "Limited Liability." Many of the "Limited Liability" banks have the same heavy liability attaching to them.

And as the Cost-book system has been so abused of late, chiefly to induce the public to go into the new "limited liability" companies so freely manufactured, we may add that scarcely a day passes that we are not asked to sell shares in many of them for anything that can be got, in order to free parties from liabilities they never anticipated when they applied for hundreds of shares, seeing them quoted at a premium.

In February, 1873, Straits' Tin was 150l.; in July, 1879, it had fallen to 52l. 10s.; it is now, in July, 1881, 89l. 10s. Chili bar copper in February, 1873, was 107l.; July, 1879, 53l. 10s.; July, 1881, 65l. Lead, February, 1873, 24l. 5s.; July, 1879, 13l. 5s.; July, 1881, 14l. 7s. 6d. Scotch pig iron at same dates, 6l. 18s.; 2l.; and 2l. 7s. 1d. Black tin, which, in 1873, would fetch 80l. per ton, had declined to 35l. in July, 1879, and is at present selling at about 56l.

Dolcoath has been at work altogether about 140 years, and paid 600,000l. profit from copper originally. In its transition state the mine was so poor that shares became unsaleable, and many were relinquished. Cook's Kitchen adjoining has been worked more than 120 years continuously, and returned over two millions. A singular feature in the mine was, that with all these riches, the lode was never productive in the shaft. This was sunk in the course of the lode, and for 50 fathoms did not show any trace of mineral whatever. Levels had to be driven some fathoms each way to get into the ore ground. One, therefore, should not be disheartened because shafts and levels are occasionally poor.

If our correspondent is green enough to suppose that any person whose guarantee is worth a rap would sell him 100 or 1000 shares at 17. per share, and undertake to buy them back at 17. 5s. in six months, he deserves to lose his money. The last card is being played.

We have heard but have no particulars of the discovery of silver near Prince of Wales. Many thousands of pounds worth have been sold from Prince of Wales and adjoining mines, which are all in a noted silver district. We prefer mining for copper and tin, but if silver drops in, as it has done more than once, we are glad to welcome it. We once sold a large quantity, and one small stone made 40l.

At D'Eresby Mountain the only part of the lode at No. 6 is 4½ to 5 ft. wide; 2½ ft. rich for lead, and the other leady throughout.

The Gwydyr Amalgamated have obtained the grant of a valuable piece of ground between D'Eresby Mountain and Clementina, up to the boundary of the latter.

East Blue Hills has just been inspected, and the report is most encouraging. A large extent of tin ground can be opened out quickly, and the agent informs the gentleman for whom he inspected that he is quite certain we have a good mine.

From the report of Polrose it looks as if we were likely to have something good ere long. We have been long expecting it.

Kirkmichael samples 40 tons of lead to-morrow.

## PROVINCIAL STOCK AND SHARE MARKETS.

CORNISH MINE SHARE MARKET.—Mr. S. J. DAVEY, mine shareholder, Redruth (July 28), writes:—Business has been very slow in our market throughout the week, and orders to buy and to sell have been difficult to execute. Cook's Kitchens have fallen ½, East Pools ½, Pedn-an-drea ½, South Frances 1, and Wheal Pevor 1½; but West Kittys have risen ½, and West Pollice ½. The tin standards were advanced 2s. on Wednesday, and are now 83s., 9s. Prices to-day are as follows:—Blue Hills, 2½ to 3; Carn Brea, 24 to 24½; Cook's Kitchen, 16½ to 17; Dolcoath, 65 to 65½; East Pool, 37½ to 37½; Killireth, ¼ to ½; Mellanear, 4 to 4½; New Cook's Kitchen, 6 to 6½; New Kittys, 1¼ to 2; North Busy, ¾ to ¾; Penhalls, 1 to 1½; Pedn-an-drea, 3¼ to 4; South Condurrow, 9¼ to 9½; South Crofty, 8 to 8½; South Frances, 13½ to 14; Tincroft, 16 to 16½; West Basset, 14½ to 14½; West Frances, 11 to 11½; West Kittys, 5 to 5½; West Pevor, 14½ to 14½; West Pollice, 6 to 6½; West Seton, 20 to 22; Wheal Agar, 14 to 14½; Wheal Basset, 4 to 4½; Wheal Grenville, 8 to 8½; Wheal Pevor, 15 to 15½; Wheal Kittys (St. Agnes), 2 to 2½; Wheal Uny, 1¼ to 1½; Wheal Boys, 2½ to 2½.

—Mr. J. H. REYNOLDS, stock and share broker, Redruth (July 28), writes:—Business during the week has been rather restricted, but the leading shares remain firm with the exception of South Frances and Wheal Pevor, which have had a severe drop. Yesterday the tin standards advanced the standards 2s. per cwt. Subjoined are the closing quotations:—Blue Hills, 3 to 3½; Carn Brea, 23½ to 24½; Cook's Kitchen, 16½ to 17; Dolcoath, 65 to 65½; East Pool, 37½ to 37½; Killireth, ¼ to ½; Mellanear, 4 to 4½; New Cook's Kitchen, 6 to 6½; North Busy, ¾ to ¾; North Herodfoot, ¾ to ¾; Pedn-an-drea, 3¼ to 3½; Penhalls, ¾ to ¾; Penhalls, 1¼ to 1½; South Condurrow, 9 to 9½; South Crofty, 8 to 8½; South Frances, 13½ to 13½; Tincroft, 15½ to 16; West Basset, 14½ to 14½; West Frances, 11½ to 12; West Pevor, 14½ to 14½; West Pollice, 5½ to 6; West Seton, 19 to 20; West Kittys, 5 to 5½; Wheal Agar, 13½ to 14½; Wheal Basset, 4 to 4½; Wheal Boys, 2½ to 2½; Wheal Grenville, 8 to 8½; Wheal Jewell, ¾ to ¾; Wheal Kittys, 2 to 2½; Wheal Pevor, 14½ to 14½; Wheal Prussia, 1¼ to 1½; Wheal Uny, 1¼ to 2. Cornish Bank, 24l. 10s.

—Messrs. ABBOTT and WICKETT, stock and share brokers, Redruth (July 28), write:—A moderate amount of business has been transacted this week in the leading shares, and prices have been fairly maintained with the exception of South Frances and Wheal Pevor. Subjoined are the closing prices:—Blue Hills, 2½ to 3; Carn Brea, 23½ to 24½; Cook's Kitchen, 16½ to 17; Dolcoath, 65 to 65½; East Pool, 37½ to 37½; Killireth, ¼ to ½; Mellanear, 4 to 4½; New Cook's Kitchen, 6 to 6½; North Busy, ¾ to ¾; North Herodfoot, ¾ to ¾; Pedn-an-drea, 3¼ to 3½; Penhalls, ¾ to ¾; Penhalls, 1¼ to 1½; South Condurrow, 9 to 9½; South Crofty, 8 to 8½; South Frances, 13½ to 13½; Tincroft, 15½ to 16; West Basset, 14½ to 14½; West Frances, 11½ to 12; West Pevor, 14½ to 14½; West Pollice, 5½ to 6; West Seton, 19 to 20; West Kittys, 5 to 5½; Wheal Agar, 13½ to 14½; Wheal Basset, 4 to 4½; Wheal Boys, 2½ to 2½; Wheal Grenville, 7¾ to 8½; Wheal Kittys, 2 to 2½; Wheal Pevor, 14½ to 15; Wheal Uny, 1¼ to 1½.

—Mr. M. W. BAWDEN, Liskeard (July 28), writes:—The mining market at the beginning of the week was dull and devoid of all activity, most shares being offered at reduced rates; but it has since improved on the firmness of the metal market and the advance on the tin standard; close strong buyers for the next settlement at higher prices. North Herodfoot enquired for on improvement in the 50 and 60 fm. levels. At South Wheal Crofty meeting on July 22 the accounts showed a loss on the 12 weeks' working of 9257. 19s. 6d., and a debit balance of 3486l. 1s. 9d. A call of 10s. per share was made. Subjoined are the closing prices:—Bedford United, 1½ to 1½; Carn Brea, 24 to 24½; Cook's Kitchen, 16 to 16½; Dolcoath, 64 to 64½; Devon Consols, 8 to 8½; Eveson Great United, 1 to 1½; Drake Walls, ½ to ¾; East Caradon, ¾ to 1; East Crebor, ¾ to ¾; East Herodfoot, 1 to 1½; East Pool, 37 to 37½; Glasgow Caradon, ¾ to 1; Gunnislake (Clitters), 3 to 3½; Herodfoot, ½ to ½; Hingston Down, 1 to 1½; Marke Valley, 1¼ to 1½; New West Caradon, ½ to ¾; North Herodfoot, ¾ to ¾; Old Gunnislake, ¾ to ¾; Phoenix United, 4¼ to 5; Prince of Wales, ¾ to ¾; South Caradon, 45 to 47½; South Condurrow, 9 to 9½; South Crebor, ¾ to ¾; South Crofty, 9 to 9½; South Devon United, 2 to 2½; South Frances, 13½ to 14; Tincroft, 17 to 17½; West Basset, 13½ to 14; West Caradon, ¾ to ¾; West Frances, 11½ to 12; West Mary Ann, ¾ to ¾; West Pevor, 14 to 14½; West Phoenix, 1¼ to 2; West Seton, 19½ to 20; Wheal Agar, 13½ to 14; Wheal Basset, 4½ to 4½; Wheal Crebor, ¾ to ¾; West Crebor, ¾ to ¾; Wheal Grenville, 8½ to 8½; Wheal Hony and Trelawney, 2½ to 2½; Wheal Jane, ¾ to ¾; Wheal Pevor, 15 to 15½; Wheal Uny, 2 to 2½.

MANCHESTER.—Messrs. JOSEPH R. and W. P. BAINES, sharebrokers Queen's Chambers, Market-street (July 28), write:—The business of the past week having been (as is generally the case with weeks in which the settlement occurs) restricted by the arrangement of the account, is only of very moderate amount, and prices obtained, excepting as regards rails, very similar to those ruling a week ago. The announcements of dividends on most of the leading stocks already published having been below the returns for the corresponding period of last year, have had a depressing effect, counteracting, at any rate for a time, the influence of the generally accepted hope of better times being in the not far distant future. The general markets show very little animation, but on the whole figures keep fairly steady.

BANKS have not exhibited such a small number of transactions for some time. The majority quoted here are now marked ex dividend, and probably for that reason attracts less attention than when dividends were in prospect. The purely local banks keep their figures, with only one exception, quite firm, and only in National Provincial (new) is there any change more than fractional. There are no instances of advance, and the following are lower:—National Provincial (new), ½; Bank of Liverpool, ½; and Union Bank of Manchester, ½. INSURANCE.—This class, too, has produced very few dealings, and the quotations, which are pretty evenly balanced in number, show no special tendency in alterations. Higher: National Boiler, ½; Manchester Fire, ½; and Thames and Mersey Marine, ½. Lower: Lancashire, ¾; Equitable Fire, ¾; Royal (Liverpool), ¾; and Maritime, ½.

COAL, IRON, AND MINING.—Very few lots have changed hands, figures realised not calling for remark. The variations in prices are irregular, and are apparently more due to individual influences than to any general movement. Canadian Copper have receded almost to vort figures marked last week. Indian Gold mines, after having been marked lower all round, show some recovery. Bolekow have moved sharp, with the result of ½ rise, but a sudden fall is to be noted in A. Knowles and Sons. Higher: Bolekows (fully paid), ½; ditto (12½ paid), ½; Palmer's Shipbuilding (A), ½; West Cumberland Iron, &c., ¾; and South Indian Gold, ¾. Lower: Andrew Knowles and Sons, 1¼; Telegraph Construction and Maintenance, ½; Tharsis, ¾; Canadian Copper, 3s.; and Indian Phoenix Gold, ¾.

COTTON SPINNING AND MANUFACTURES.—Advance in cotton without as yet a commensurate hardening in yarns has weakened this market during the past few days, which has been further contributed to by realisations on a few lots by timid or weak holders; but the weakness is more in arrest of further advance than actually lower prices, very few lots being offered besides those for realisations of profits the tone being far from despondent.

TELEGRAPH.—Whilst the business done is small compared with last week's quotations, Anglos (pref.) are ½ higher, whilst Direct U.S. Cable and Western and Brazilian are ½ lower, these comprising the whole of the movements. CANALS.—Rise of ½ in Bridgewater Navigation and one or two dealings in the same company are the only movements. CORPORATION STOCKS, &c., still firm, few lots changing hands, and the only variation in price being ½ advance in Manchester Corporation Stock. MISCELLANEOUS.—With only a trifling business passing. Bodega shares have come into request, and during the past week show a rise of ½. On the other hand, Zedone are down ½ and Southport Winter Gardens ½. The report of Ryland's and Sons show a profit of 24,000l. for the half-year, to which it is proposed to add 11,000l. out of the reserve fund to pay a dividend at the rate of 5 per cent. J. P. Westhead and Co.'s balance-sheet shows a loss on the half-year of about 600l., which, deducted from profits brought forward from previous half-year, leaves about 700l. to be carried into current half-year's account.

RAILWAYS.—The changes we have to report for the week are not very material as a whole. In a few stocks, however, there have been distinct alterations for the worse. The gloomy views expressed by the Chairman of the Manchester, Sheffield, and Lincolnshire Railway at their meeting yesterday has caused a serious depreciation in the values of their ordinary and deferred stock; but only the scarcity of the stock has prevented this occurring before. North Staffordshire have declared a dividend of 2 per cent., against 3½ twelve months ago, and coupling this with presage of Sheffield prospects, a result is shown in a 2 per cent. drop. The Chatham pref. dividend is 3½ for the year, and the scarcity of stock tends to support their price, but their ordinary is ¾ lower. Most other stock shows improvements, Lancashire and Yorkshire being stronger on rumoured favourable dividend. North-Easterns are decidedly stronger, and London and North-Western have improved ½. Great Northern, A, are good, the heavy "back" paid on this stock no doubt contributing to their value. The Canadian market has again suffered from conflicting reports. First and second pref. being short for delivery, are better; thirds, however, not having that stimulus are not much lower, though they have shown good figures, at one time during the week. Trunk traffic to-day, 1057 decrease, was discouraging, but figures have improved somewhat since the announcement. Great Western of Canada have rallied a little from worst point touched in the week. Americans move in sympathy with reports respecting the President's condition.

## SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, sharebroker and ironbroker (July 28), writes:—During the past week the improving prospects of trade and agriculture, along with the easy money market, have kept prices firm, though business is very quiet. At the intervening fortnightly settlement the rates of continuation were lighter than at the previous one, so that the new account for August 12 opens favourably enough, provided there was any prospect of renewed activity.

In shares of coal, iron, and steel companies the movements for the week comprise advances of 10s. per share on Bolekow, Vaughan, and 2s. 6d. each

on ditto 12<sup>th</sup> paid and Steel Company of Scotland. On the other hand, Mar bled has declined 8s. 9d. per share, Ebbw Vale 2s. 6d., Glasgow Port Washington 2s., Chillington Iron and Clyde Coal each about 1s., and Monkland Ordinary and Preference both smaller extents. In the Scotch pig-iron market the price of warrants has declined from 47s. 7<sup>1</sup>/<sub>2</sub>d. to 47s., owing to the collapse of the scheme for reducing the production through the Scotch refusing to join with the Cleveland ironmasters in this scheme; otherwise there is not much cause for complaint, except the low prices, as most departments of the trade at home and abroad report increasing activity. A meeting of the Five Coal Company will be held on August 3. Altamir are at 27s. 6d.; Benhar remain about 9s.; Bolekow, Vaughan, 28 to 28<sup>1</sup>/<sub>2</sub>; Bilton and Crump Meadow, 52s. 6d.; Clyde Coal, 69s. to 70s.; Chillington Iron, 40s. to 45s.; Chatterley Iron, 5 to 6; Ebbw Vale, 7<sup>1</sup>/<sub>2</sub> to 8; Henry Bridge (A), 10 to 11; John Bagnall and Sons, 7s. 6d. to 10s.; Lofthouse Colliery, 52s. 6d.; Marbella Iron, 6<sup>1</sup>/<sub>2</sub> to 6<sup>3</sup>/<sub>4</sub>; Monkland Iron and Coal, 4s. to 5s.; ditto (pref.), 10 to 12; New Sharpley Colliery (pref.), 20s. to 20<sup>1</sup>/<sub>2</sub>; Steel Company of Scotland, 10<sup>1</sup>/<sub>2</sub> to 10<sup>3</sup>/<sub>4</sub>; and West Lancashire Collieries, 100.

In shares of foreign copper and lead concerns Tharsis has improved 2s. 9d. per share, but Rio Tinto 5 per cent. have declined 1<sup>1</sup>/<sub>2</sub>s., Huntington 2s. 6d., and Canadian 1s. 6d. Tharsis have been sold from 42<sup>1</sup>/<sub>2</sub>s. 6d. to 42<sup>1</sup>/<sub>2</sub>s. 3d. Canadian are at 26s. to 28s. Huntington opened at 33s., and declined to 30, but since the issue of the report they have improved to 33s. Panulicillo, 5<sup>1</sup>/<sub>2</sub> to 5<sup>3</sup>/<sub>4</sub>; Pierrefitte (pref.), 15s. to 17s. 6d.; Rio Tinto, 19<sup>1</sup>/<sub>2</sub>; and Santa Cruz Sulphur, 12s. 6d. to 15s.

In shares of home mines business is still quiet. Glasgow Caradons are 1s. 6d. lower, having been sold from 19s. 6d. to 18s. 6d.; Killifreth are unaltered, although the mine is steadily improving, and has some important points to prove soon. The inactive state of the metal market is the only cause for shares in many home mines remaining at their present nominal quotations. Blaen Caelan are at 20s.; Blue Hills, 50s. to 60s.; Geron, 5s. to 10s.; Callington Consols, 20s.; Derwent, 25s. to 35s.; East Caradon, 15s. to 20s.; East Chiverton, 20s. to 30s.; East Craven Moor, 12s. 6d. to 17s. 6d.; East Hill, 30s.; East Blue Hills, 10s. to 12s. 6d.; East Devon Consols, 20s. to 40s.; Fortescue, 7s. 6d.; Fron Hall United, 15s. to 20s.; Great Holway, 4 to 5; Gover Consols, 12s. 6d. to 17s. 6d.; Gawton United, 12s. 6d. to 17s. 6d.; Gwydyr, 8s. 9d.; Great Polgoth United, 10s. to 15s.; Great Wheel Polgoth, 2s. 6d.; Herodsfoot, 7s. 6d. to 10s.; Indian Queens, 15s. to 20s.; Llandegla, 25s.; Leadhills, 30s. to 40s.; Llannwrst (pref.), 20s.; Lady Ashburton, 15s. to 16s.; Mount's Bay, 5s. dis.; North Molton, 2s. 6d. to 5s.; New Peever, 40s.; New Penrose, 10s. to 15s.; North Hendre, 4 to 5; North Herodsfoot, 10s. to 12s. 6d.; Old Penrose, 7s. 6d. to 10s.; Old Penrose, 15s. to 20s.; Rhosmor, 60s. to 70s.; Red Rock, 5s. to 10s.; South D'Ersey, 8s. 9d.; South Devon, 27s. 6d. to 32s. 6d.; Silver Valley, 5s. dis.; Tamar, 15s. to 20s.; Trevinice Consols, 17s. 6d. to 20s.; Tressavan, 5s. dis. to par; Walkham United, 12s. 6d. to 17s. 6d.; West Pateley, 7s. 6d. to 8s. 9d.; West Crebor, 8s. 9d. to 10s.; Wheel Elizabeth, par to 2s. 6d. prem.; Wheel Fortune, 35s. to 45s.; Wheel Jewell, 7s. 6d. to 10s.; and Ystwith, 12s. 6d. to 17s. 6d.

In shares of gold and silver mines there is no particular change to notice. There is a better demand for Indian descriptions. Richmond remain at 15<sup>1</sup>/<sub>2</sub> to 16<sup>1</sup>/<sub>2</sub>s. Brazilians are at 12s. 6d. to 17s. 6d.; Central Wynand, par to 2s. 6d. prem.; Effluents, 65s. prem.; Emma, 40s. to 50s.; Eureka (Nevada), par to 2s. 6d. prem.; Flagstaff, 10s. to 12s. 6d.; Gold Coast, 5s. to 10s.; Gold Association of Canada, 15s. to 17s. 6d.; Indian Trevelyan, 20s. to 25s.; Indian Kingstons, 5s. dis. to par; Javali, 3s. to 5s.; New Gold Run, 4s. to 6s.; Pitangui, 60s. to 70s.; Quartz Hill, 5s. dis. to par; and Rhodes Reef, 16s. 3d. to 17s. 6d.

In shares of oil and miscellaneous companies, Phospho-Guano shares have advanced 10s. Scottish Wagon are now dealt in ex div. Uphall Oil remain at 7<sup>1</sup>/<sub>2</sub> to 7<sup>3</sup>/<sub>4</sub>s.; Lawes' Chemical, 5 to 5<sup>1</sup>/<sub>2</sub>s.

On Contango-day (Monday) the following were the rates of continuation current:—Contango: 1d. on Benhar Coal; 1<sup>1</sup>/<sub>2</sub>d., 3<sup>1</sup>/<sub>4</sub>d. on Canadian Copper; 3d., 2d. on Clyde Coal; 10<sup>1</sup>/<sub>2</sub>d. on Ebbw Vale; 1d. on Caradon; 1d., 2d. on Glasgow Port Washington; 2d., 1d. on Huntington; 3d., 4<sup>1</sup>/<sub>2</sub>d., 5d. on Marbella; 3<sup>1</sup>/<sub>2</sub>d. on Monkland Iron; 3<sup>1</sup>/<sub>2</sub>d. on Preference; even, 1d. on Omoa; 4<sup>1</sup>/<sub>2</sub>d. on Panulicillo; 9d., 10<sup>1</sup>/<sub>2</sub>d., 11d. on Steel Company; 1s. 9d., 2s., 1s. 9d. on Tharsis; 1s. 9d. on New; 5d. on Wheel Basset; 6d. on Paraffin. —Backwardations: 2s. 6d., 2s. 3d. on Rio Tinto; 2s. 6d. on Broxburn; 1s. on Broxburn New; 6d., even on Uphall Oil. On the market the market prices fixed today for the under-mentioned shares with those current at last settlement for the same shares the variations thus shown to have taken place during the account are as follows:—Broxburn Oil have advanced 7<sup>1</sup>/<sub>2</sub>s. 6d. per share; Tharsis, 10s.; Broxburn (new), 10s.; Oakbank, 3s.; Tharsis (new), 2s. 6d.; and Glasgow Caradon, 6d. On the other hand, Huntington have declined 13s. 6d. per share; Monkland (pref.) and Rio Tinto each 7s. 6d.; Canada Copper, 6s.; Monkland, 5s. 6d.; Walkinshaw Oil and Young's Paraffin each 4s.; Clyde Coal, 3s.; Marbella Steel Company of Scotland and Uphall Oil each 2s. 6d., and Glasgow Port Washington, 1s. 6d. The remainder are unaltered—Benhar Coal, Glasgow Caradon (new); Omoa and Cleland, Panulicillo, and Richmond.

EDINBURGH.—Messrs. THOMAS MILLER AND SONS, stock and share brokers, Princes-street (July 28) write:—There is no change of much importance since Thursday last in Scotch railways stocks. In Bank stocks, Clydesdale has risen from 224 to 225, and Union from 225 to 228, while Commercial has declined from 252 to 251. In Insurance shares, Scotch Union, A, have gone from 76s. to 75s. The new shares of the Scottish American Mortgage Company command a premium of 18s. In mines, Canadian Copper have declined from 27s. to 25s. 6d., Marbellas from 6<sup>1</sup>/<sub>2</sub> to 6<sup>3</sup>/<sub>4</sub>, Tharsis, from 42<sup>1</sup>/<sub>2</sub> to 42<sup>1</sup>/<sub>2</sub>s. Grand Trunk stocks and Canadas have been freely dealt in. Americans have been rather depressed, but have shown some recovery to-day.

#### IRISH MINING AND MISCELLANEOUS COMPANIES' SHARE MARKET

CORK.—Messrs. J. H. CARROLL and SONS, stock and share brokers, South Mall (July 27), write:—Great Southern were bought at 111<sup>1</sup>/<sub>2</sub> to-day and Midlands at 84. Bantons unchanged. National Banks were done at 71<sup>1</sup>/<sub>2</sub>, and Munsters at 73-16. No change in Hibernian or Provincials. Cork Steam Packets remain about 12, and Lyons 5. Gouldings are sellers at 8<sup>1</sup>/<sub>2</sub>, and Levys buyers at 4<sup>1</sup>/<sub>2</sub>. Gas shares changed hands at 6<sup>1</sup>/<sub>2</sub>. 19s., and Harbour Board Debentures were asked for at 102<sup>1</sup>/<sub>2</sub>.

CAMBORNE VEAN.—A fine course of copper ore cut within the last few days in Camborne Veian. It is known as the Town lode, is worth 20<sup>1</sup>/<sub>2</sub> a fathom, and Mr. Joseph Trythall and his son, working miners, will do well with this start.—*Cornishman*.

INFLUENCE OF MAGNETISM ON CHEMICAL PHENOMENA.—An interesting field of enquiry is opened up by some experiments lately made by Prof. Ira Remsen, of the Johns Hopkins University, in Baltimore. He desired to know whether the chemical behaviour of a metal is in any way influenced by magnetic action; and with this view placed a shallow vessel of thin iron, containing a solution of copper sulphate, over the poles of a strong permanent magnet. The copper was deposited in a fairly uniform way on the entire surface except at the lines marking the outlines of the poles. These lines are strongly marked as depressions in the deposit. The action was still more striking when an electro-magnet was used, instead of the permanent magnet. In a narrow space marking the outlines of the pole there was no deposit. Within this outline the deposit was fairly uniform, but outside of it the copper was deposited in irregular ridges running at right angles to the lines of force, and apparently coincident with the lines marking the equipotential surfaces. The largest circles Prof. Remsen obtained were nearly 4 in. in diameter. The nature of the phenomenon is not well understood as yet, though the effects are obviously due to influence of the magnetism on the iron plate, or on the liquid, or on both together.

THE BATLEY BOILER EXPLOSION.—In charging the Grand Jury at the opening of the West Riding Assizes at Leeds, Mr. Justice Kay, referring to the charge of manslaughter against Mr. Thomas Hirst, of Batley, arising out of the explosion of a boiler at his works by which 16 persons lost their lives, said that in law the accused would be guilty of manslaughter if in respect of this boiler he was guilty of gross negligence in the use of it, in the way which was described in the depositions. He need not say that a case of this kind was a very anxious and an important case to try. Large employers of labour were bound to take every reasonable precaution for the safety of the men in their employment, and this prosecution was taken up by the Treasury because the Government considered it to be their duty to impress upon employers of labour the necessity of taking every reasonable precaution to ensure the safety of the lives of the persons employed by them. He could only then judge of the case from the depositions. Should it come before him, the case would no doubt be subjected to a careful and protracted trial. He mentioned it as a case certainly involving principles of law and of social duty which were of the highest importance.

CURIOUS COLLIERY PROSECUTION.—At the Pentre Police Court on Monday Lewis Williams was summoned by Messrs. Thomas and Griffith, of Gelly Colliery, for breach of colliery rules. The Stipendiary enquired why such a person was appointed to the onerous position of furnace man? and remarked that the fact of his incompetency ought to be as well known to Mr. Thomas (the prosecutor) as to himself. The man had been in his Court often, and he had always dealt with him as a semi-lunatic. In appointing a man of that class to perform such grave duties the Stipendiary thought the employers were parties to his default. For him to fine Lewis would make the same impression upon him as if he threw a stone into the river. The Stipendiary dismissed the case. The case against John Morgan (the day furnace man) for leaving before Lewis Williams arrived was permitted to lapse, the owners agreeing to pay the man his day's wages.

## Meetings of Public Companies.

### NEW QUEBRADA MINING COMPANY.

The ordinary general meeting of this company was held at the Cannon-street Hotel on Thursday.

The Hon. T. C. BRUCE, M.P., in the chair.

Mr. N. G. BURCH (the secretary) read the notice convening the meeting, and the report of the directors was taken as read.

The CHAIRMAN said: Gentlemen, the results of this year's operations are pretty fully stated in the report which you have in your hands, and I have not a very great deal to add to it. But at the same time there are one or two points on which I would wish to make some explanations. You will see that the increase in amount of ore exported has been regular, and I trust will be satisfactory to you, and I hope (and I believe I may say) that it will be progressive. At the last meeting I stated that the quantity of ore taken out from the mines would amount to 22,000 tons for the year 1880; it has, in fact, amounted to 21,487 tons, which was pretty nearly what we expected, and this year the works have gone on, and we expect, though it is rather early to talk about it, that we shall have a larger production. During the early part of the year there was some delay, owing to the difficulty of procuring shipping. There was a good deal of bad weather, and ships did not arrive so regularly as we expected. You will observe that there is a certain diminution in the average copper contents of the ore; that diminution was to be expected with the enlarged amount of stowing ground operated upon. You are aware that the highest quality of ore which we possess (which is called the ruby ore) is only in limited quantities—limited deposits; and when we push our works forward, as we are doing now, we open up principally deposits of yellow ore, which varies in value. Some is nearly as good as the ruby ore, and some of it is inferior; the inferior now is sent to the smelting works. But the greater proportion of this yellow ore affects the average of the whole quantity exported. We have recently in Santa Barbara slopes met with a certain quality of ore, and it is of a value which is very valuable and which has tended to keep up the average. We do not know what amount there may be of that, but, of course, as long as we can get any of it it improves the average value of the whole. The main feature of our working in this year has been the opening of this new level to the north of our present workings, and in reference to which I will endeavour to explain (I am afraid it will be very difficult to make myself understood) the bearing of the operations upon the prospects of our undertaking. The lode on which we work, which is pretty continuous, runs approximately from south to north; the old workings, most of them were in the southern portion. Hitherto we have been working extensively in the southern portion and upwards, there being a large hill above the present workings, and we do not know how far the lode extends upwards, but we have this satisfactory feature—that the workings in and about this Santa Barbara level which have been very much extended of late, have shown a very good quality ore; a very large proportion of the export ore has been derived from that place, and there is no appearance whatever at present of the ore giving out above us, as we are going on in that direction. To the north of that, however, the line of the lode, as I explained, being from south to north, we have reason to believe that the lode will continue to that direction more than a mile. North of our present workings is what is called the Titara lode; we have no right to assert that the lode is continuous from the one to the other, but our principal efforts of exploration have been directed in that quarter, with the view of extending our workings north to open up the lode in that direction, if it exists, as we believe it does. With this view we commenced some years ago what was called the deep level. After striking the lode it was continued north; it passes under what was called the Ruby Saloon, which was a large deposit of ore, and was worked by ourselves, and partially worked by others. It passed, I think, something like 200 ft. below it, and it remains in ore. Some time ago we made a cross-cut from a winze below the Ruby Saloon north to the east with the view to ascertain what was there. At first we found some old workings, and found a portion of barren ground; it was oxide of iron and other things, but it was not copper, and that was, so far, discouraging. But we pushed on this cross-cut to the east, and then we came upon the lode again, so that we met it at a point considerably further north than our deep level has yet reached. We believe the width to be at least 100 ft. I may mention that a great portion of the export ore has been derived from the lode we have taken out, the Santa Barbara slopes, have been taken from cross-cuts and stopes in deep levels. Now, having ascertained the lode is in existence to that extent at that depth so far to the north, it became a question with us how it was best to open it up. The deep level itself had got into very hard ore, and the ventilation was imperfect. In order to remedy this we came to the conclusion to make another level some distance northward of the present heading of the deep level. This is the level which is mentioned in the report, and is termed Holman's level. That level is about 250 fms. to the north of the heading of our present deep level, and is 10 fms. or 12 fms. below it. If the lode goes due north we should expect to meet it in the new level at about 100 to 120 fms. from its entrance. We have driven it in 60 fms. by hand labour; so far the ground is not very hard. We have, as mentioned in the report, now that our finances are in rather better order, and are enabled to go into expenses of that kind, provided steam boring machinery, which is being put up at this moment, and which should greatly expedite the driving of this level. The indication we had in the driving the cross-cut from bottom of the Ruby Saloon showed that the lode had rather a tendency to bend eastwards, so that it may be rather further from the north than we expected. This level is driven east, and under those circumstances when the boring machinery is up we hope that in about two or three months we shall reach the lode in this new level. We shall then drive it to the south to meet what is our present deep level. It will be some 10 fms. below it, and when we meet it or can establish a communication we can then secure the ventilation of all that part of the mine, and so open out a very large field if the lode remains continuous. Some time ago a discovery was made of a lode cropping at a considerable height, about 100 fms. higher than this, which we called Holman's discovery. We have worked into the lode, as stated in the report, and taken some 350 tons out of it. The lode is rather irregular, but still there appears to be a large mass of ore, and that mass is in the direction of the lode which we are at present working, although it is some 400 yards beyond the extreme point of present workings at Aroto. Now we propose when we reach the lode in our new level to run one heading south to meet our old deep level, and another north to the lode which we have so discovered. If the lode is continuous down to the depth of the new level, that will open up another very large mass of ore. We cannot say approximately how far that lode will have to be driven to, but we have reason to suppose that we shall find the lode within a reasonable distance. Holman's level will unwater it and enable us to open operations there on a large scale as well as in our present workings. That lode is, as I said before, in a line with the Titara Mine. Well, if it turns out to be a large mass we shall work that first and work gradually. We hope it may be continuous. We shall work gradually on till we come to Titara. That is going into very remote matters, as none of us will be here by the time we get to the end of them. I wish to explain the object of the level we are driving, which we believe will be of immense importance to the future value of the mine, and we are pushing it on with all the speed we can. Now, under those circumstances we have put our whole strength upon that, and we have not continued to any extent the explorations in the Titara Mine, which is too far away to be worked conveniently at present. If we find the lode continues we had better get it to through the lode than from the outside. I hope I have made myself understood. I have tried to do so, but although one may have a thing in one's head it is sometimes difficult to put it into words, and we have endeavoured to do so, and trust you will see we are carrying the works on in a way which will result in the development of a very large amount of valuable ground, and establish, if it is necessary to establish, the great value of this property. The work has been done with the least expense, and in the most complete way which it was possible for us to do it. Those are some of the reasons why we have gone into these operations, which are explained in the report. The ore in the eastern cross-cut from the deep level is very good, and in Santa Barbara it keeps up its character, and there is no appearance of ore coming to be exhausted, and it is being exposed in considerable quantities, and nobody has found where the bottom of it is. We have never come to anything indicating the point at which the lode contracts, so that the 10 fms. additional backs will open up a mass of ore entirely above it whatever there may be below. We have got as low as we can for unwatering without steam-power, at least we shall have when we get this level made. Now there is another branch which is of great importance in our present and future working, and that is the smelting works. I told you, when I last had the pleasure of meeting you, that there had been a certain time of experiment, and that in getting these works into order, and that it took some time to find the best mode of smelting, and to find the best materials from which to construct the furnaces. Some did not stand at first, but we have now material on the spot which stands well. We constructed five furnaces; at first they were in different models to see which would turn out the best; we have now abandoned some of the models, retaining principally the Castilian, which answer very well. We have applications from our superintendent for castings for more furnaces, and we have no limit now to the number, except the amount of ore which we can get out, and the power of the blasting engines which we have. The works are now going on in a perfectly regular way. Of course there are accidents to the machinery as there are in all parts of the world, but there is nothing beyond the ordinary accidents of working. There is another point, however, which has engaged our attention, and which is of quite as much importance to our future as the smelting, and that is the production of copper by the wet process. I need not tell you if you are at all acquainted with the subject that the production of copper by that process is a thing of great deal of ingenuity and chemical skill, and has been exercised, and is being exercised at this moment. There are many different systems, several of them have been tried in works with which we are connected in terms of friendship, at least where these experiments are carried on to a great extent, and where they have a larger amount of loose capital to spend upon these things than we have, we are favoured with the results of all these experiments, and we have instructed our mining superintendent to make some experiments out there with the view of testing the applicability of some of these processes, and some experiments have been made, and the results will be duly reported. As soon as we have been able to fix upon the best available process we mean to apply it. We have to consider, of course, the expense of the operation and materials required, but with all that we have every reason to believe we shall arrive at a process which will enable us to extract copper at a very considerably less cost than the present, and that is a matter of very great importance to our success. In order to show how our trade has developed and is calling for additional appliances, we have lately chartered some steamers to bring home the ore, instead of simply trusting to sailing vessels as we have hitherto done. We shall require coals for our smelting furnaces, and we are taking the coals out and bringing on board. We have chartered one steamer on June 25, and the steamer reached about July 6, and some four or five days afterwards a telegram was received by us that the steamer had reached St. Thomas on her homeward journey. Now, according to that the steamer must have been loaded at the rate of 100 tons a day at least, and the advantage of that very rapid arrival of the ore will, we hope, very much over-balance the additional cost of the steamer. I need not tell you the sooner we can get the stuff to market the better for us. It was in consequence of the regularity with which our works are carried on, and the ore brought down, that we were enabled to take a measure of that kind. We have only

to say what we have had the pleasure of saying frequently before, and what I am glad to say again, that we have every reason to be satisfied with our superintendent, Mr. Holman. He has carried out our instructions with great activity and zeal, and he has managed the affairs of the company very successfully. Our colleagues, Mr. Ormiston, who visited the mine at the beginning of this year, was impressed with that view, and although he must have difficulties with the staff in such a country as that, still those difficulties must occur every now and then, and we find that Mr. Holman has surmounted those difficulties, and has managed the affairs in a manner that has met our entire approbation, an approbation which I hope will be shared by you. Now, gentlemen, there is one other point which I have to allude to, because there is a circumstance which has arisen which is rather unfortunate. We have mentioned to you several times the question about the royalties. You know that under the original contract of this mine there were certain royalties reserved to the proprietors of the ground. These royalties, in the form in which they were placed at that time, are not entirely applicable to the state of things now, and it was necessary to come to an understanding on the subject. The property is claimed by different persons; it is mortgaged, and I believe the mortgagor and mortgagee are an infant. The result is there are three or four cross interests, which it is very difficult to reconcile. We did make an arrangement with one of these parties whom we considered entitled to deal, and which we considered a reasonable one under the circumstances; but the other parties refuse to be bound by it, and it is impossible in fact to get any agreement or any authority except through the intervention of the Court. Well, a suit has been raised by one of these parties; we are not prepared to deal with this until we obtain through the Court some definite decision as to what we have to recognise. When that has been ascertained we shall be able to act. I may add that one reason why we have carried over such large amounts both last year and this is that the claim for royalties was unsettled, and we carried to the reserve fund a sum which in our opinion is considerably more than any claim could possibly arrive at, but we thought it necessary for protection. I regret to say in the course of this suit we received an intimation from the solicitors that they would apply to the Court for an injunction against our paying any dividend. We have plenty of money outside the dividend to satisfy them, and we are ready to pay the money into Court or not to the Court may direct, except we do not mean to sacrifice our interest. In the meantime these gentlemen have thought fit to give us this notice. We offered to give them a guarantee of a person in this city whose name I need not mention, but whose name would have been far more than sufficient for security, but they have not accepted it, and they have threatened these proceedings. Under these circumstances, and as they have asked you to do to-day is to declare a dividend in the way in which it is placed in the report. If any opposition is made by these gentlemen we shall apply to the Court, but we have no doubt whatever we shall get this opposition put aside. In the meantime, in case these proceedings are longer than we anticipate present, we shall have to ask you to allow us to fix the payment of the dividend at Aug. 12, or at some future day as soon as the directors think it proper to do so. I think it is more than probable that there will be no necessity for declaring it, but we know what proceedings in the Courts are, and of course if we had an injunction we could not pay it. There is nothing in these proceedings that need cause us any alarm, because we have provided amply for them in our reserves. It is only a temporary threat with the view of enforcing us into an agreement; and although I know it may be annoying to you we shall have to make such a proposal, I must ask you to leave us to distribute the dividend as soon as we can, we can do so without interference or risk. Now, gentlemen, I beg to move that the report and accounts now submitted be received and adopted, and if any gentleman has any question to ask on the business of the company I shall be very glad to answer him to the best of my powers.—Mr. MEATES seconded the motion for the adoption of the report.

Mr. SAQUI asked what the expenses in London consist of?—The CHAIRMAN replied that they constituted payment for the London office, clerks, secretary, and administration.

Mr. SAQUI: Are the directors remunerated for their services?—The CHAIRMAN: Yes; that is fixed by the Articles of Association.

Mr. HOBBS said he had a very great deal of attention and interest to the remarks of the Chairman, and suggested that in future a plan of the mines should be hung up at the meeting.

The CHAIRMAN replied that he would be very glad to do that, but the difficulty was with such complicated workings it would be rather difficult to understand them. However, he would be glad to have a map prepared by the next meeting.

Mr. HALL was very pleased to hear the Chairman's statement of the output, but asked whether he referred to the output or shipment of ore?—The CHAIRMAN said he referred to the total amount of ore taken out of the mine. A portion was shipped to the coast, and another portion was sent to the smelting-works.

A SHAREHOLDER said they had spent a large sum on smelting works, which he hoped and believed would be productive. He thought, taking the general expenses on the whole, they were rather less than in former years. Of course, they were affected somewhat by the price of copper.

The CHAIRMAN: We are affected by that in the returns, but as the output increases, unless there is something very unusual, the expense per ton diminishes. Mr. HANCOCK asked how it was that they could not get more stuff out. Could they not get labour?

The CHAIRMAN said they could not get an unlimited supply of labour. There was some difficulty in some parts of the mines with regard to ventilation, which was being improved. The output had really considerably increased. A SHAREHOLDER asked how much regulus the directors hoped to send forward in the next year, and what were their prospects?—The CHAIRMAN replied it was very difficult to answer that with any accuracy. They knew how much had been made so far; the smelting works had been going on progressively improving, and they hoped that the return of the second half of the year would be even better than what they had already. They expected they would have an average of 3000 or 4000 tons.

In reply to a further question, the CHAIRMAN stated that an interim report would be issued.

Mr. ORMISTED gave a detailed account of his recent visit to the mines, and said that he had never in his experience met with a more satisfactory statement of matters than he found existing at their works. He spoke also most highly of the character of the men and of the ability of the manager and staff. He had referred to the valuable character of their property, and said that he visited the country as Chairman of the Bolivian Railway.

The report was then put and carried unanimously. The dividend was declared, and the retiring directors, Messrs. T. W. Meates and George Lyall, were re-elected. Mr. G. T. Rait, the retiring auditor, was re-appointed. The meeting was then made special, and certain resolutions were adopted with the view of holding meetings annually in future instead of half-yearly. A vote of thanks to the Chairman and directors terminated the proceedings.

### PRINCE OF WALES MINE.

A general meeting of shareholders was held at the office of the company, Gracechurch-street, yesterday.

Mr. J. Y. WATSON in the chair.

The notice calling the meeting was read by Mr. C. B. PARRY, the secretary.

The minutes of the last meeting were read and confirmed.

The CHAIRMAN said the report of the agent was satisfactory and exhaustive that he need not detain them at any length. They would see that the tin sold from March 1 to July 20 amounted to 2697. 6s. 9d., and there were 50 tons of copper ore on the mine. They were returning about 3 tons per month at the present time, and hoped to increase the output of tin and copper. The report of the agent was, as he had said, so exhaustive, that he thought it would be better for Mr. PARRY to read that report.

July 27.—We beg to hand you our report of this mine for the general meeting to be held on the 29th inst., showing the present improved position of your property, and the cheering prospects before the shareholders in the development of this mine. During the past four months we completed the cutting of the ground in south side of engine-shaft, above the 90, in order to sink the shaft below this level at an angle to follow the lode, and sunk the perpendicular shaft 1 ft. 1 ft., cut a tip-plate and way for tramroad around the shaft, and the sinking of the engine-shaft continued in a diagonal direction to follow the lode, which is 6 fms. 3 ft. below the bottom of tip-plate or perpendicular shaft, with all the necessary timber work, &c., in good working order. The 90 east has been extended 15 fms., through a lode varying in size from 1 to 2 ft. wide, producing stones of good quality copper ore, with fine stones of tin, and in places over 15<sup>1</sup>/<sub>2</sub> per fathom; lode now 3 ft. wide, and has a very kindly appearance, producing good stones of tin and copper ores. A rise in the back of this level is put up on the hanging wall side of the lode about 9 fms. high, and in places cut into and taken down, which have produced rich quality native and copper ore, with occasional stones of tin. The 90 west has been driven about 9 fms., in which the lode has proved to be of good size, varying from 2 to 5 ft. wide; now 2 ft. wide, worth 4<sup>1</sup>/<sub>2</sub> for copper and 12<sup>1</sup>/<sub>2</sub> for tin, and showing indications of improvement every foot advanced in this direction. We have two men stopping in back of deep adit, on Goodluck lode, which is 2 ft. wide, a profitable lode for the tin. We laid out the stamps and dressing floors with boulders, alpine pits, &c., but as yet have no means of treating the slimes, not having water to work it. We also repaired the burning house, flues, &c., which are now in good working order; put a new piston and piston-rod, and other repairs to our winding and stamping engine; repaired the water-wheel and crusher, and are now waiting for the new tooth-wheel from the foundry to put it in complete working order. As soon as this is done we shall soon have a copper ore sampling of about 50 tons of average quality. As to the future development of the mine we are inclined to think that the same mode of operations should be continued throughout by sinking the engine-shaft, and continuing the drive of the 90 both east and west; and also the 77 west as soon as the 90 is a little further advanced, and communicate the rise with the 77 above, at the same time work on the ore ground throughout the mine, on tutwork or tribute, in accordance with the nature of the required work to make sufficient returns to pay the monthly expenditure on the mine, or make profits, as soon as the ore ground is properly cut into sections for stopping with economy; also additional stamping power should be applied—not less than 12 heads, and the water, which is now going off at the shaft level about 15 fms. deep, pumped to surface for dressing and other purposes, to do which will require a larger lift at the adit level. We are pleased to say that the prospects before the company are very encouraging; that by sinking and driving to reach the ore gone down in the bottom of the 90 at deeper levels, and driving the 77 and 90 fms. levels westward, where there are said to be copper courses analogous to those around which the lode was so productive in the former working. The probability is that should these levels be advanced in that direction it will open out a new mine, and require a new shaft from surface, and be a lasting and profitable concern to the shareholders.—S. ROBERTS, F. ROWE.

The CHAIRMAN said it must not be forgotten that before the mine was worked out the mine sold 50,000<sup>1</sup>/<sub>2</sub> of copper and paid good dividends. Since then they had spent their money in erecting larger machinery, and they were now going in to open up ore ground. He did not see why they should not repeat what they had done before, but it took time.

Mr. PARRY said that the 77 west two or three years ago came into a strong course of copper water, and it was the opinion of the chairman that there was a rich lode there, but they could not prove it until the 90 was driven under it, and

the had now been done. They could not go below the 77 before, because the machinery was not powerful enough. The present engine was powerful enough to drain the mine and other portions of the mine for years to come, so that there was no further heavy expenses looming in the distance.

In reply to Mr. LATRELL, the CHAIRMAN said that the expenses had been 3507 per month, but he did not think they would be so large in future.

The accounts and agents' report were then approved and adopted.

Mr. LATRELL asked what the 50 tons on surface would probably fetch.—Mr. PARRY said he thought about 47 per ton to 51.

The CHAIRMAN said they had been doing a great deal of dead work. There was still something to be done to the crusher before they could send the 50 tons to market. He might mention that at one time the ore from this mine fetched 75 to 80 per ton. There was a large proportion of silver in it. On one occasion there was a small stone sent up as a specimen, which was sent on to Messrs. Johnson and Matthey for assay, and that single specimen afterwards sold for 407. The next question to consider was the call, which the committee suggested should be 1s. 6d. per share.

Mr. HERBERT asked if the dividend of 6s. 6d. per share, making with the 3s. 6d. per share already paid, payable on and after Aug. 27 next, discount at the rate of 5 per cent. being allowed on all calls paid on or before that date.

Mr. PARRY said the call would give about 9007, and the mine was in debt 7207. Everything was charged close up, and when the liabilities were paid there would be about 4007, to the good, inclusive of the value of the ore on the surface. He estimated that the cost would be about 7007, for the next four months.

The meeting then broke up.

#### TRAMWAYS AND GENERAL WORKS COMPANY.

The annual meeting was held at the company's offices, Moorgate-street, on Thursday (Mr. S. W. MACLURE in the chair).

The CHAIRMAN, in moving the adoption of the report, said that the position of the company was very satisfactory. They had still to complete the Bordeaux contract, and to finish the lines sold to the Lombardy Road Railways Company. The Burnley lines would also soon be completed, and they would give their attention to developing that undertaking. At the same time they had plenty of new business offering. It is gratifying to see from the transfers that their shares continued to be bought by the investing class, and he believed that the results would continue to be as satisfactory to them as they had hitherto been. He then moved the adoption of the report and accounts, which was seconded by Mr. RUCK, and carried unanimously.

A resolution was passed to the effect of 6s. 6d. per share, making with the 3s. 6d. per share already paid, 10 per cent. for the year ended June 30 last, and is hereby declared payable, free of income tax, to the shareholders registered in the books of the company on the 21st inst. was then put by the CHAIRMAN, and also carried unanimously.

The CHAIRMAN, in moving the re-election of Mr. Lambert and Mr. Ruck, the retiring directors, both of whom were unanimously re-elected, expressed his thanks to both of his colleagues for their valuable assistance and co-operation, and paid a high tribute to the important services rendered to the company by Mr. Lambert, its managing director.

Mr. W. W. Deloitte, the retiring auditor, was unanimously re-elected, and the proceedings closed with a cordial vote of thanks to the Chairman and to the directors and officers of the company for their services, moved by Mr. WILLIAM ABBOTT.

#### FOREIGN MINES.

**RICHMOND CONSOLIDATED.**—Telegram from the mine at Eureka, Nevada:—Week's run, \$33,000. Much bullion absorbed. Starting furnaces.

—The directors have received the following telegram with reference to the suits with the Albion Mining Company:—"Decision for Richmond. Victoria patent (belonging to the Richmond Company) on big lode theory held to control everything between extended end lines."

**ST. JOHN DEL REY.**—Telegram from Morro Velho, dated Rio de Janeiro, July 22: Produce 11 days, first division of July, 10,500 oits., value 40691; yield, 57 oits. per ton. Profit for the month of June 40007.

**CHILE GOLD.**—(Correction).—The produce for May was 630 ozs.—not 360 ozs., as stated by a clerical error in last week's Journal.

**INDIAN GLENROCK.**—Extracts from the general manager's letters, dated July 1: Plantation Tunnel: Progress has been slow, owing to very tough ground. Quartz leaders are putting in an appearance, and I think the main reef will shortly be intersected.—Jungle Tunnel: Here in the end we have just struck a promising looking vein of quartz, but there is not sufficient work done on it to report fully. There is a large quantity of water coming away, and the tunnel above has been comparatively drained, the former being a good sign.—New Reefs: Openings are being proceeded with, but the quartz is not yet intersected. I am happy to report having discovered a new reef on Glenrosa. It is a very masterly looking lode, and near the site of the reduction works, only rather below their level. It runs across the Glenrock stream into the coffee and is there lost, but in the jungle, on the Glenrosa side, it is very bold and well defined. Next week we shall put in some men to open it up. We have commenced erecting stamp building, and hope to commence to put on the roof of one-half of the building next week. We shall get on with the work with all haste. Carpenter are busy about timber for the stamps, &c., and making house, which will be finished very soon. In No. 2, ground is easy blasting and mixed up with seams of quartz all through the drift, one seam or branch being about 15 ins. thick. This drift looks very favourable, and we expect to intersect the reef shortly.

**SOUTH INDIAN GOLD.**—Extracts from the general manager's letters, dated July 1: South Indian: In No. 2 tunnel the west reef is 8 ft. wide, composed principally of quartz, with abundance of iron and arsenical pyrites. In No. 2 east the reef at present small and somewhat disordered, which I consider only temporary. The west reef is still large, being fully 10 ft. wide; a fine-looking reef. In No. 4 driving east and west on the course of the reef, which is about 4 ft. wide, and looks well for the production of precious metal. At this point we are also drawing east on a counter vein, which is from 2 to 3 ft. wide, and has a promising appearance. In No. 5 the ground is very hard, and consequently progress is slow. In No. 6 the reef appears to be opening out wider. The west reef is large and masterly, 3 ft. wide; principally quartz with large quantities of pyrites. The gold is in the rock, and the rock is hard for blasting; the progress is naturally slow. In No. 8 (Harvey adit) work is suspended till the arrival of the new miners.

**SOUTHERN INDIA ALPHA.**—H. A. Severn, July 1: Yesterday I received your telegram: "Wire tons crushed and yield to date." I replied thus:—"First ton 4 ozs.; 19 tons 2 ozs.; only trial crushings from various localities. No tallings done yet. Five stamps more and Berdan start steady work night and day on good stone soon." The first ton of stone was taken from the sinking to hole through from Wright's level to Vigor's level, since washed out. The remainder of the stone is from various places; most of it is from the sides and floor of Vigor's level, which I have been obliged to lower 3 ft.; and, as the mill is not yet treating tallings, I considered it of the first importance to test such stone as I intended to get out for the large mill. This has in a measure been done, and we are at this date free of water in the sinking of Wright's lode, and all is quite secured with timber, &c. The mill site is being prepared, and other work which is necessary is being moved on in a steady manner.

Alpha Steam Mill: No work for another five head and Berdan frame ready to put together. The gold cloth is now on its way up from Calicut. I hope in about ten days, or less if possible, to have the ten stamps and Berdan—in fact, a proper complete mill plant to put on to the stone from No. 3 drive. The mill has been working in a rough way only five heads, but I am more than satisfied with its work. The foundations put in are very sound, and the engine repairs are made efficient, and I have no doubt whatever that as soon as the other five stamps are worked and the Berdan fixed, mill boarded in, a small office, and a regular shift of men working night and day, much good work will be done. Of course, it is of the first importance that the engine should have its proper amount of work to do. I shall, as soon as the mill is in proper form, send you all particulars, as also details of the mounds after passing Berdan's; and, when I see enough pyrites making, shall send Colonel Bolton a sample. The melting house is finished, and the furnace burns admirably, so does the assay fire. I shall practically examine all our lodes as time goes on. The weather is severe, and heavy rains are on. All the works are progressing well, and so far all is safe, and I entertain no fear for any part of our work. The dislodgment of rocks (100 tons), and their certain fall down on the small but necessary bridge near the main tunnel and air-engine, has occupied my attention, and I am taking means to prevent any damage here should this large, threatening mass of rock come down from its position, about 160 ft. above. Party all well. Arrangements are nearly completed for the employment of 12 or 24 Eurasians as miners, and Parry and Co., of Madras, have been kind enough to send the men, and otherwise assist in the matter. There are at the present time, owing to heavy washings down by the rains, many visible masses of quartz that I have not hitherto seen, and the men who tend to the washings are doing good work. We are about to lay off and find the boundaries of the Prince of Wales. In conclusion, I desire to state that I am preparing a large scale map of Alpha ground, which will show technically what has been done, and what is to be done in future.

**OREGUM GOLD.**—Capt. Bryant, July 1: I returned from Bangalore on Saturday, the 25th ult., as advised in my last, and found everything on the mine going on satisfactorily. On Monday I examined the workings at the 65 and 80 ft. levels. At Monday's shaft I was prevented from a thorough inspection, owing to a large quantity of stuff in the levels, the most important of which, the 80 ft. on the reef, by the former workers, I ordered to be cleared, which has since been done. In the 65 ft. level we find a cross-cut extended east of the air-shaft 6 ft., and intersected a belt of ground, showing numerous small veins of stuff, in which there are levels extended north and south, at present full of stuff, on which we do not intend clearing, as the workings in the 80 ft. level and that of the air-shaft to this depth or about, we consider prove this point. The levels and cross-cuts in the 80 are extended in a very complicated form, but the principal level from which the former workers obtained their gold is the level extended south directly from the air shaft 54 ft. The first 18 ft. of this drive is said to have yielded 17 tons of quartz, from which there was 40 ozs. of gold extracted. We have searched for this run of gold-producing ground, and find in the bottom of the level a leader of quartz about 15 ft. in length, giving a good piece from zero to 8 in., showing visible gold, which I should say will give a sizeable piece. A fair sample will be sent for assay. We are making preparations to sink the main shaft, also to erect the stamps, and intend prospecting on reefs at once. All of our European staff, excepting one miner and the engineer, whom we think will be well shortly, are in good health. I, therefore, hope to be able to get on with contemplated work without any further delay.

**COLUMBIAN HYDRAULIC.**—E. S. Jones, June 19: Mr. Welton informed you the piping was commenced on the 18th ult. at the new opening to open out the mine at its deepest point. Soon after the work began the bed rock, consisting of hard granite, was uncovered, and was found to rise 5 ft., and dipping under No. 1 sluice. No. 2 sluice was continued and carried forward until a thick bed of pipe-clay prevented us from going any further with them. We at once set men to cut through to be able to continue piping at the gravel ahead of this, but it has not yet been completed. As soon as this is done we shall commence running on good gravel, and shortly will be able to report an estimate of the value. At present it is not possible, as we can only see a little of it, but there is no reason to fear of its not being as productive as any yet worked. The result of run No. 78 from May 15 to June 17, during which washing was carried

on for 635 hours at this point, has resulted in the produce of \$546-68 by cleaning up 160 ft. of No. 3 sluice. When the pipe was taken away from the old workings men were set to work to carry the pipe through from the present distributor, and when completed we shall be able to work again that part of the mine where the gravel is rich. The present supply of water is only sufficient for one monitor, and the preference is given to the lower part of the mine.

**4 CALIFORNIA GOLD.**—Cablegram received July 28: "300 tons of milling ore have been crushed during the week; value \$2000."

**EUREKA (NEVADA) SILVER.**—Report on Williamsburg Mine for the week ending July 3: The north drift on the 225 ft. level has been advanced 14 ft. during the week, without any change; total, 163 ft. from shaft. This drift is now being worked by contract at \$5-75 per foot. The stopes between the first and second levels are producing the usual quantity of ore. We have about 20 tons on the dump ready for shipment.

**COLORADO UNITED.**—Advices from the mine to July 7: The plat is fixed at 26 1/2 ft. level, and the 12th level started away about 35 ft. in order to commence sinking the shaft from the 12th to 13th levels, which work will be started about July 11. The 11th level is in about 183 ft. No. 2 stope, east of Silver Ore shaft, is looking the same as before. The 10th drift has been driven about 10 ft. There is nothing fresh to report concerning the tributaries' places. The dressing works are running as usual.

**RUBY AND DUNDEBERG CONSOLIDATED.**—Report for week ending July 3: Dundeburg: The 700 ft. level has been advanced 27 ft. during the week; total, 537 ft. from the shaft. There has not been any work done in the east cross-cut, but the level during the week, as the work was engaged in cutting out and enlarging the 700 ft. station; as soon as the station is completed work will be resumed in this cross-cut. The east drift from No. 2 winze, 50 ft. above the 700, has been advanced 21 ft. during the week; the face of this drift is in very favourable looking ground for ore. The No. 2 ore body, 55 ft. below the 600, is from 8 to 10 ft. wide, composed of ore of good quality, and looks very promising. The No. 1 ore body above the east cross-cut (600 ft. level) is somewhat smaller; at present it is about 4 ft. wide, of extra good quality. The No. 5 ore body, north of the winze, is somewhat smaller in the bottom of the stope near the 600, but is looking better in the top, which is about 60 ft. above the 600. The south winze at the end of the 600 has progressed 6 ft. in good ore during the week; total, 12 ft. below the 600. The No. 3 stope above the 400 is producing some good ore, but is rather small at present. This stope is now connected with the south drift from the 300 west cross-cut, and work is resumed in the end of the cross-cut in the direction of the Home Ticket. Have shipped 179 tons of ore, and have 45 men and six contractors at work, besides tributaries.—Bullwhacker: The stope above the 325 is looking better; the ore is from 3 to 1 ft. wide, carrying a high percentage of lead. The winze below the 325 has been sunk 10 ft. during the week; total, 50 ft. The east cross-cut from the north drift on the 325 has been advanced 13 ft. during the week; total, 20 ft. A seam of ore about 3 ft. wide was encountered near the end of this cross-cut. Have raised up 6 ft. on the ore, which is improving as it goes up. The lode at this point is about 25 ft. wide, mostly low grade ore and iron, but looks very promising. Have shipped 35 tons ore, and have 11 men at work.

—July 26: Telegram received from Eureka to-day—"The week's run from the furnace was \$9000, from 179 tons of ore, producing 26 tons of bullion. The shipments of gold were 218 tons. The production as above is for five days only from the furnace."

**SANTA BARBARA GOLD.**—Mr. W. H. Richards, Paris, June 6: During May 1214 tons of mineral were stamped, yielding a produce of 4287 oits. of gold, or equivalent to an average of 3-53 oits. per ton of stone stamped. This produce of 4287 oits. of gold, valued at 8s. 6d. per oitava, amounts to 18217. 19s. 6d., and the estimated working cost for the month, at exchange 21-3/4, being 13307. 11s. 5d., leaves an estimated profit of 4917. 8s. 1d. for May. In addition to the above mine working cost, the sum of 5447. 14s. 6d. was estimated as expended on capital account during May, for the construction of the new water works, the course and new hauling machinery, and building of new carpenters' and smiths' shops completed this month. Mr. W. H. Richards reports that the No. 1 shaft had been sunk 3 ft. only during the month, the lode being 9 ft. wide, and producing mineral of fair quality. At the No. 8 stope, south of No. 1 shaft, the lode continued to maintain its size of 10 ft. wide and its value, while at the No. 8 stope, north of the same shaft, the lode averaged 11 ft. wide, with an improvement in its value. The lode in Nos. 5 and 4 stopes, south of No. 2 shaft, had improved and fallen off in value slightly, respectively. The end No. 5, north of No. 1 shaft, continued to open out to 8 ft. wide. The other points of operation presented no material change from the previous month. The dressing tables at No. 4 stamping mill had been increased during the month by about 100 superficial feet. As regards the new works, Mr. Richards reports that launders 200 ft. in length, with stands and runners complete, had been prepared for fixing on the new watercourse, and 2761 superficial feet of planks sawed; 5510 metres of platform, and 1105 lineal metres of channel excavated at the new watercourse. The new shops for carpenters and smiths completed. The mine captain reports as follows for May—"The quantity of ore raised during the month amounted to 1449 tons, of which 222 tons were rejected at the spalling floors as refuse stone, and 1214 tons treated at the stamping mills, leaving 13 tons unstamped at the end of the month. The average quantity of ore raised per ton for the month amounted to 56 1/2 wagon loads, and the number of holes bored per man for the month 68."

**PITANGUI GOLD.**—T. S. Treloar, dated Pitangui, June 18: The produce obtained for the month of May from the stamping of 669 tons of mineral raised during the month, amounted to 1765 oits. of gold, which, valued at 8s. 6d. per oitava, equal the sum of 7507. 11s. The estimated cost for the same month at Exchange 21-3/4, (exclusive of 807. 0s. 10d. expended on capital account in respect of launders for carrying water to new stamping-mill, troop rancho, and stables, oil-house, &c.) amounted to 7257. 17s. 2d., leaving an estimated profit for the month of 247. 13s. 10d. Mr. Treloar states—"The produce obtained to date (June 18) amounts to 1187 oitavas of gold. We are opening up the auriferous ground discovered in the Jose Candido section of the mine, but so far have met with nothing richer than already advised. In Holland the shaft also vigorous operations are being prosecuted, and the vein is showing no change requiring notice. The side level from the adit is advancing apace; there is now no water in the end, but notwithstanding this the ground swells in a few days to such an extent as to prove most trying to the timber, large sets continually breaking. We have found it necessary to take in hand the erection of a troop rancho and stables, having no accommodation in this respect. The adit wagons are now drawn by mules, and it is requisite to add to our number of animals for general purposes, thus rendering the rancho and stables indispensable. The reduction officer reports that all signs of any vein of gold have been caused by the water, and that the ground is for future treatment in arrastres. The mineral received from the mine at the beginning of May was poor, but in the latter part of the month it improved. Twenty-one sacks of peinstuff were received from the mine during the month of May, but they proved poor."

**UNITED MEXICAN.**—Advices from Mr. Hay, dated Guanaxuato, June 24: Mine of San Cayetano de la Ovejera: The ore which has appeared in the frente of San Isidro continued to show itself on a breadth of 3/4 vara. In the pozo in the same name, and in the frente of the same lode, the ore is of the same quality as above. Though we have continued to work on ore in the frente its width has gradually decreased, and yesterday it was reduced to 1/2 vara in width, but the ore is of the same quality as that of the frente. In Santa Margarita the back of the frente improved at the beginning of the week; it was 1 vara broad, of a very clean appearance, the bronze having almost entirely disappeared. This point, after widening out to the extent just named, has got reduced to 3/4 vara again, nevertheless it is producing a good part of the extraction. The cross cut to the bajo de la working, to find the ore of San Isidro, is stopped, as it does not pay the buscone, and is going to holiday. The buscone has been sent to the contrato de San Pedro, which though it has a little ore, is stopped for want of a buscone who will take it up. The same may be said of the pozo of San Isidro alto. The pozo of San Pablo is in ore, but producing only a small quantity of very fair ley. This new working is just above Santa Engracia. The contrato de la Providencia is being worked, but the ore is very narrow, about four fingers width. The contrato de San Antonio, above San Pablo, and the working of Lupas, have become unproductive. In the canon (level) north-west no ore has appeared, and of a good character. The buscone has been sent to the contrato de San Pedro, which though it has a little ore, is stopped for want of a buscone who will take it up. The same may be said of the pozo of San Isidro alto. The pozo of San Pablo is in ore, but producing only a small quantity of very fair ley. This new working is just above Santa Engracia. 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## Mining Correspondence.

## BRITISH MINES.

**REDFORD UNITED.**—R. Goldworthy, July 27: The lode in the 127 east is still under the influence of the large flow of capel. The end has been driven through; it is 1 ft. wide, producing a little muddle and copper, but not sufficient to value. No lode has been taken down in the 115 since last report.—Bridge Lode: There is no alteration to call for any special remark in the 20 east or west. Good progress has been made in sinking Macallan's engine-shaft. The lode fully maintains its former size and value—30¢ per fathom for the length of shaft. No other change to notice.

**BLUE HILLS.**—S. Bennetts, R. Harris, July 23: In the 80 east end the two parts of the lode seem to be again nearing each other, where they are found in contact, the lode is usually most productive. The 42 east on the north lode is without much change. The 30 east end is worth 14¢ per fathom.

**BWLCH UNITED.**—W. Northey, July 27: In the 50 east the lode maintains its usual size and kindly appearance, and carrying a little more sulphur than for some time past. The 30 cross-cut is without change since I last advised you. The lode in the back of the 12, under adit, will yield 17 cwt. of lead ore per fathom. The lode in the bottom of the same level, west of the rise, will yield 20 cwt. of lead ore per fathom. Here I may remark that the men have completed the stopping away the block of ground which separates the old level and our present new level, which will make a complete roadway, and enable us to select the ore-stuff. To-day the men have commenced to fix a stall in the back of the 12 m. level, to enable them to stop away the ore ground, which appeared rich lead ore when driving through. In Marvin's lode, in the 15 m. level, under the adit driving west, the lode is strong and well defined, and worth 21 cwt. of lead ore per fathom. A tribute pitch, on the same lode, in the old workings near surface has greatly improved, and the men getting fair wages.—Surface Work: The carpenters are busy engaged in fixing the 29 ft. wheel, and are expected to complete it by to-morrow. The mason will complete the walls around the pit on Friday, when he will at once commence to build a new butte, which is required to compete with the old one. The pumping machinery is working well.

**CARNARVON COPPER.**—John Roberts, W. Darby, July 26: In the communication between the 80 and 90 we have opened up sufficient room, cleared up rubbish, and extended tramroad to the end in the 90, and commenced stopping on Monday; both stops are much the same value at present—worth about 24¢ per fathom. In the 90 we have commenced to rise on the ore which we cut through in driving the end; the lode here looks very promising, and worth full 10¢ per fathom. We still continue driving the end with four men, so as to reach the other bunches of ore, which are a little east of the sump.

**CROOK BURN.**—Jacob Craig, July 22: We continue to have the string of carbonate of lime in the end of north cross-cut, with the ground a little harder, but no other change. The driving is let to four men for 85¢ per lineal fathom. We have repaired the damage done to the timber in rise from south cross-cut by the water being in the mine, and we will break into the vein next week. The engine is working satisfactorily, and we have now a chance of developing the mine in a proper form.

**CWMYSTWTH.**—B. Rouse, July 27: There is but little alteration to notice in the 15, driving east of Edward's winze on the new lode; the lode continues to produce occasional spots of lead ore, and is worth for blende 1 ton per fathom. A large stream of water is issuing from the forebreast, and on the whole the lode presents a promising appearance. Gill's lower level, east on the new lode, fully maintains its value, as estimated in the setting list for July—1½ ton of lead ore per fathom. Fair progress is made in the driving of this level, and the indications are very favourable. The lode over and under the 15, east of King's shaft, on Kingsley's lode, will produce respectively 1½ ton of lead ore per fathom. Our other stops throughout the mine worked for lead and blende, also the pitch under Leveltaw on the copper lode, maintain their average output. We have found it necessary to draw very scantily from the ponds during the past week so as to make the water last out to assist the river supply, which had greatly fallen off, thereby keeping one mill going only. I am pleased to say, however, that the water has been freshened up again nicely by a very heavy shower of rain, leaving one pond three-fourths full and the other with about half a day's supply in it.

**DEVON COPPER AND BL. & L.**—Wm. Skewis writes, July 23: Good progress is being made in Cripes's shaft, and the lode there presents much the same appearance as in last report. Considerable speed is being maintained in clearing the 30 fm. level and deep adit.

**DEVON GREAT CONSOLS.**—Isaac Richards, July 14: Wheel Josiah: In the 144, east of the count-house shaft on the new south lode, the lode is 4½ ft. wide, composed of capel, quartz, and small quantities of copper and muddle ore.—Wheal Emma: Incline Shaft: In the 150, east of Oliver's cross-cut, on the north part of the lode, the lode is 5 ft. wide, composed of capel, quartz, peach, muddle, and a little copper ore of good quality. In the 137 east of Friend's cross-cut, the lode is 5 ft. wide, composed of capel, quartz, peach, floor, and a small quantity of copper and muddle ore.—New Shaft, New South Lode: There has been nothing done at the 205 west since last report, the men having been engaged sinking Rich's winze in the bottom of the 160, west of the Railway shaft. In the 115 east the lode is 3 ft. wide, of a promising character, and producing small quantities of copper and muddle ore. In the 100 east the lode is 2 ft. wide, composed of capel, quartz, peach, muddle, and a little good quality copper ore. In the 80 east the lode is 3 ft. wide, of a promising character, and producing a little of both copper and muddle ore.—Railway Shaft: In Bray's cross-cut, north at the 205, the ground is favourable for progress, and highly mineralised. In the 190 west, on the north part of the lode, the lode is 4 ft. wide, composed of capel, quartz, peach, and a little good quality copper ore, and is worth 3 tons of muddle per fathom. In the 175 west, on the south part of the lode, the lode is from 3 to 4 ft. wide, of a very promising character, and yielding some saving work of copper and muddle ore, and promises improvement. A rise (Bray's) has been commenced in the back of the 175 west, on the south part of the lode, for communication with Rich's winze, in the bottom of the level above, the lode in which is 4 ft. wide, and worth 4 tons of copper ore and 4 tons of muddle per fathom. In the 160 west, on the south part of the lode, the lode is 1½ ft. wide, composed of capel, quartz, muddle, and a little copper ore. In Rich's winze in the bottom of the 160 west, on the south part of the lode, the lode is 4 ft. wide, and worth 4 tons of copper ore and 3 tons of muddle per fathom.—Watson's: In the 150 east, now 10 fms. 2 ft. below the 125, the ground continues without alteration.

**DEVON GREAT UNITED.**—Isaac Richards, July 28: The skip-rail has been completed to the 104 fm. level at Willeford's shaft, and the men are now engaged cutting hitches for bearings and dividing the shaft, which work is progressing very satisfactorily. In the 60 fm. level west of Willeford's shaft on the Capel Tor lode, the lode is 2½ ft. wide, composed of capel, quartz, and peach, and continues to yield saving work of copper and muddle ore. In the 60 fm. level west of Watson's shaft on the Capel Tor lode, lately started, the lode is 2½ ft. wide, composed of capel, quartz, peach, muddle, and some good quality copper ore. In the 50 fm. level west of Watson's shaft on the Capel Tor lode, the lode is 2½ ft. wide, composed of capel, quartz, peach, muddle, and some good quality copper ore. The lode is being continued by the side of the lode. In the cross-cut at the 20 fm. level west of Willeford's shaft, the ground continues favourable for progress.

**DRAKE WALLS UNITED.**—M. Bawden, July 23: We have connected the main road at the 40 fm. level, and are now working 6 ft. a day, and hope in another fortnight to have removed the whole of the pressure of water from the deep adit. Every effort is being put forth in driving the said deep adit, so as to make the communication to the lode mine, and thereby vent the copper lode, on which the adit is for a considerable distance driven. The alterations and repairs to shafts are proceeding in a satisfactory manner.

**D'ERESBY MOUNTAIN.**—John Roberts, Wm. Sandoe, July 27: The No. 6 end is looking as well as we have ever seen it. The lode, or the lead part of the lode, is going wider and stronger as we advance. The lode behind we are pushing on as the end advances, and naturally the lode improves in value, and are worth quite 1 ton of lead to the fathom. The lode at No. 5 are looking rather better than they were, and we 5 ft. wide, directly after having removed a great length of the soft and unproductive part of the hanging side of the lode, to break away a great quantity of good lead-stuff.

**DERWENT.**—J. Morphet, July 26: List of Bargains Let for August: Jeffries's Shaft—Middle Vein: The 95 east continues to yield good ore; its width is 9 ft., and its worth 1 ton 17 cwt. The flats on the south side of the vein in this level are producing 26 cwt. of ore per cubic fathom. No. 1 stop in the back is 4 ft. wide, but coarse, yielding only 10 cwt. of ore per fathom, but will improve as it advances nearer the end of the level. No. 2 stop is also 4 ft. wide—a nice-looking vein, and yields 15 cwt. of ore per fathom; the men in this stop have been increased to six. No. 3 stop has been abandoned.—Westgarth's Shaft: Middle Vein: East of this shaft upon this vein we have now only one stop; width 3 ft., value 12 cwt. of ore.—North Vein: The 93, east of lode, opposite shaft, is still promising; its width is 4 ft., produce 13 cwt. The lode in the back of this level is 5 ft. wide, and it yields 16 cwt. of ore per fathom. The 93, west of same rise, is 4 ft. wide, and worth 12 cwt. No. 1 stop in the back yields 20 cwt. of ore; vein 5 ft. wide. No. 2 stop (newly started) also yields 20 cwt. of ore per fathom. The lode here is again disordered, and the ground more troublesome for driving; the lode will yield from 5 cwt. to 7 cwt. of ore per fathom. A stop below the 205, to six men, at 27 fm. in; lode 5 ft. wide, and worth from 15 to 20 cwt. of ore per fathom. A stop over the 205, to four men, at 50s. per fathom, and worth from 14 to 16 cwt. of ore per fathom. A new stop in the back of the 205, to two men, at 40s. per fathom; lode 2 ft. wide, and worth 15 cwt. of ore per fathom. The 190 to drive north, by two men, at 37. 15s. per fathom; lode poor. At 3 fms. north of this end a good lode is starting in the bottom of a sink below the 175, and within 2 fms. or 3 fms. of the 190; worth fully 14 cwt. of silver-lead ore per fathom. We are daily expecting to meet with this ore in the end. A stop in the back of the 160 north, to four men, at 37. 5s. per fathom; lode 4 ft. wide, and worth 15 cwt. of ore per fathom. A stop in the back of the 175 north, to four men, at 40s. per fathom; lode 2 ft. wide, and worth 15 cwt. of ore per fathom. We are clearing the 147 north, and hope soon to reach the end, where we are told there is a good lode standing. A stop over the 80, to two men, at 50s. per fathom; lode worth 10 cwt. of ore per fathom. All the remaining work for the month, to four men, at 32s. per 100 skips, and all the fillings at the different levels to two men, at 12s. per 100 skips.

**HINGSTON DOWN.**—Thomas Richards, July 27: No. 1 lode in the deep adit level, east of the south cross-cut, continues much of the same character, containing capel, quartz, and muddle, and occasional good stones of copper ore. In the 12, east of the engine-shaft, the lode contains capel, quartz, muddle, peach, and a little black and grey copper ore. The skip-rail is completed, and the sinking of the engine-shaft, cutting tail, &c., below the 12 commenced.

**INDIAN QUEEN'S CONSOLS.**—Wm. Hooper, Thomas Job: During the past fortnight our work has been principally confined to the 40 in driving cross-cut east of engine-shaft with all possible speed. The ground is still of a very promising character for tin; we have intersected a cross-course bearing muddle, copper, and tin, leading towards the great deposit gone down below the 30, which point we have not as yet arrived at, but we have every reason to believe in a short time this mine will be a good dividend-paying property.

**KIT HILL.**—J. H. B. Verece, July 28: The lode in the 109 fm. level, south of engine-shaft, is 4 ft. wide, worth 2 tons of lead ore per fathom. The 87 cross-cut going west in search of more lode is getting wet, indicating that approach to something new. The 77 south is a lode 2 ft. wide, composed of

spar and blende, but not to value for lead ore. The winze below the 86 will be deep enough for the 97 by the end of next week. The 86 going north of junction, on the east part of the lode is worth 15 cwt. per fathom. The three stops in back of said level are together worth 5½ tons per fathom. The three pitches in the mine are worth together 1¼ ton per fathom. The boiler is laid down close to the engine-house, and the men are preparing for flues, &c., which work is being pushed vigorously. We have sampled 40 tons lead ore and 20 tons blende, for sale next Thursday.

**EAST UN.**—Henry Eddy, Jas. K. Harvey, July 28: In the 82 west the junction of both leaders of copper ore will be met with in another 9 ft. The rise in back of the 70 on No. 1 lode produces 1½ ton of copper ore per fathom and 45 lbs. of tin per ton of stuff. No. 2 lode is 9 ft. wide (a fine looking capel throughout), and all stamping work for tin.

**EAST WHEAL CREBOR.**—George Rowe, July 27: The lode in the 70, west of engine-shaft, is improving in character and yielding good stones of ore. The north lode in the 70, west of cross-cut, is also improving in size and character, and the ground in which the lode is imbedded is highly mineralised. We are looking forward to some important discovery in this character. The lode in the stopes below the 60 is worth 8¢ per fathom. The dressing department is progressing very satisfactorily.

**EAST WHEAL LOVELL.**—Richard Quentrell and Son, July 37: The lode in the engine-shaft is not quite so large as it was, but it is producing rich tin stuff. In the 42, driving east of middle shaft, the lode is improving as we get under the tin ground a men in the level above. It is being driven by six men, at 37. 10s. per fathom, and the ground is very favourable. There is no alteration to notice in any other part of the mine.

**GAULTON COPPER.**—George Rowe, jun., July 23: The lode in the 117 east is 6 ft. wide, principally composed of capel, spar, muddle and ore, worth 16¢ per fathom. The lode in the stop in the back of the 117 is worth 8¢ per fathom. No. 2 stop in the back of the same level (117) is worth 12¢ per fathom. The lode in the 105 east is showing a very kindly appearance, with muddle and ore, worth 15¢ per fathom. The lode in the stop in the bottom of the 103, east of cross-cut, is worth 10¢ per fathom. The lode in the 95 east is producing arsenical muddle spotted with ore. The lode in the 72, east of cross-cut, is worth 7 ft. wide, producing 3 tons of muddle ore per fathom. The flues of the new arsenic works are all covered in and nearly completed, and the stack 35 ft. high.

**GLENROY LEAD.**—R. Rowe, July 27: The sinking is going on regularly below the 122 fm. level. No change in the lode. In the 108 driving north we have still a wide lode, yielding stones of lead and blende. The stop in the roof of the 25 is yielding fair quality stuff for lead and blende.

**GODDARD'S LEAD.**—R. H. Vivian, July 28: The sinking of middle shaft has been very successful this week, having sunk 3 ft., and to-day in taking down the lode it is worth 10 cwt. of lead ore per fathom. The timber is now coming on to the mine, and the engine-shaft will be secured forthwith, where we believe there is a better lode gone down than has hitherto been seen.

**GOODEVERE.**—R. Knott, July 26: To sink the shaft by six men, at 12¢ per fathom; the lode, though smaller than when we last reported, is still regular, and we think it will soon assume its former character, as the ground is getting more favourable than it has been during the last fortnight. To drive the shallow adit cross-cut by four men, at 3¢ per fm.; here we calculate the cost of the adit to be 10¢ per fm. The lode is being sunk. To drive the deep adit cross-cut by four men, at 4¢. 10s. per fm.; good progress is being made, and we hope soon to intersect the No. 1 south lode, which is said to have yielded a good deal of tin in the shallow workings near the valley. We have six men employed in bringing up the lobby, which is being urged on as fast as possible. The masons and carpenters are also getting on satisfactorily with the account-house and other buildings. We have succeeded in purchasing a 12-horse steam-pump, with frame, &c., in good condition, on reasonable terms, and we are now getting the mine ready for the summer.

**GREAT LEX.**—Redcliffe, July 27: Since resuming some of the deeper pits and pitches in the deep mine, as indicated in the last report, the 247 end north has considerably improved, chiefly for blende, the present value being 20¢ per fathom. We have started a new winze in the 235, a short distance north of Welsh shaft, the value of which is 25¢ per fathom. There being room enough made for the accommodation of stuff by the stop in the 220 between Welsh and the engine shafts, the men have now been placed to stop from the top of the winze for the better working of the ground; here, however, it is not of much value to begin with, but it will quickly improve, as is shown by the winze. There is nothing more requiring remark in this part of the mine. In Dumbell's lode in the 230 end north has recently still further improved, and is worth 40¢ per fathom. The 215 end north has also struck a good course of ore, and is at present worth 50¢ per fathom. There is no alteration to mention at any of the working places above this until we come to the 70 end south, where the lode lately gave signs of improvement, but it is again quite poor. The repairs required to the 60 north have been completed, the deads accumulated there, and in the course of next week we hope to be able to let down the water in Wheeler's shaft. In the Trial shaft, No. 2 lode, the men are for the present engaged in putting up timber and making the shaft secure for permanent sinking. In the new shaft, north of the Great Elyan course, the ground is easy and most congenial for the production of mineral. The men are making good progress in sinking, and we expect to intersect the lode on an early day. The masons will commence building the engine-house next week, and we are pushing on with the surface work as fast as possible.

**GREAT WEST OLIVERTON.**—John Curtis, July 27: The engine-shaft is sunk 3 fms. 1 ft. 6 in. below the adit level. Lode 18 in. wide, and looking kindly for the depth to produce lead, but cannot sink any deeper on account of having too much water for the engine. I have the day but the men to drive west on the engine lode, which is 18 in. wide, producing muddle, &c.

**GREAT WHEAL POLGOOTH.**—John Rodda, July 26: We are getting on as well as can be expected with the clearing of the deep adit. We have had two or three big breaks to go through, but I think we shall only get one more of any consequence. The shallow level has also been cleared to within 20 fms. of the level, which will bring in the water on the wheel. The cutting for the flat-rods we have almost completed.

**GREEN HURTH.**—William Vivian, July 22: The end of the opening level, south from the engine-shaft, will still yield saving work. The rise going up north of shaft from the opening level to the 31 above is yielding 6 tons of ore per fathom. No. 2 stop, south from rise above the 30, is yielding 1½ ton of ore per fathom. No. 2 stop, north of rise, is again worth 8 tons per fathom; this is a fine looking working, coming on some fathoms behind No. 2 stop. The lode in the sole of the 30 north is hard and poor, yielding 10 cwt. of ore per fathom. The lode above the 30, going on the Elson's sump, is yielding 16 cwt. of ore per fathom. The cross-cut south from the adit level is going on as usual. I have seldom seen the mine looking better than we have it just now, the stopes above the 30 being east to work, and the rise from opening level too. Outside work getting on satisfactorily, and we are doing all we can to get the cages into the shaft as soon as possible.

**GWYDYR AMALGAMATED.**—J. Roberts, W. Sandoe, July 27: Clementina: The engine-shaft is now down nearly sufficiently deep to fix bearings and cistern. The lode is much the same as the lode in the last report—a nice branch of lead on the hanging-side of the shaft and small branches crossing them, altogether producing saving work. The south end has improved a little. There is a leader of lead from the top to the bottom of the end about 3 in. The lode in the north end shows signs of improvement. There are spots of lead and blende, indications which we have not seen for some weeks before.—Aberlyn: The sump at the No. 2 is without any alteration, worth from 2½ to 3 tons of blende per fathom. The No. 2 end is harder, and less blende in the part of the lode we are driving. There seems to be a hard bar of spar come across the end, which in all probability the soon disappear again.

**HERODSFORD.**—P. Temby, G. A. Temby, July 28: Setting Report: The 215 to drive south, by six men, at 45. 15s. per fathom. The lode has improved; it is 3 ft. wide, and worth from 18 to 20 cwt. of silver-lead ore per fathom. The 215 to drive north, by four men, at 44. 10s. per fathom; lode 2½ ft. wide, and worth from 12 to 14 cwt. of silver-lead ore per fathom. We are preparing to draw the stuff from this level with the gin-wheel, and when this is completed, which we hope will be in a few days, stopping will be commenced at the 215. The 205 to drive north, by four men, at 44. 10s. per fathom; the lode here is again disordered, and the ground more troublesome for driving; the lode will yield from 5 cwt. to 7 cwt. of ore per fathom. A stop below the 205, to six men, at 27 fm. in; lode 5 ft. wide, and worth from 15 to 20 cwt. of ore per fathom. A stop over the 205, to four men, at 50s. per fathom, and worth from 14 to 16 cwt. of ore per fathom. A new stop in the back of the 205, to two men, at 40s. per fathom; lode 2 ft. wide, and worth 15 cwt. of ore per fathom. The 190 to drive north, by two men, at 37. 15s. per fathom; lode poor. At 3 fms. north of this end a good lode is starting in the bottom of a sink below the 175, and within 2 fms. or 3 fms. of the 190; worth fully 14 cwt. of silver-lead ore per fathom. We are daily expecting to meet with this ore in the end. A stop in the back of the 160 north, to four men, at 37. 5s. per fathom; lode 4 ft. wide, and worth 15 cwt. of ore per fathom. A stop in the back of the 175 north, to four men, at 40s. per fathom; lode 2 ft. wide, and worth 15 cwt. of ore per fathom. We are clearing the 147 north, and hope soon to reach the end, where we are told there is a good lode standing. A stop over the 80, to two men, at 50s. per fathom; lode worth 10 cwt. of ore per fathom. All the remaining work for the month, to four men, at 32s. per 100 skips, and all the fillings at the different levels to two men, at 12s. per 100 skips.

**HINGSTON DOWN.**—Thomas Richards, July 27: No. 1 lode in the deep adit level, east of the south cross-cut, continues much of the same character, containing capel, quartz, and muddle, and occasional good stones of copper ore. In the 12, east of the engine-shaft, the lode contains capel, quartz, muddle, peach, and a little black and grey copper ore. The skip-rail is completed, and the sinking of the engine-shaft, cutting tail, &c., below the 12 commenced.

**INDIAN QUEEN'S CONSOLS.**—Wm. Hooper, Thomas Job: During the past fortnight our work has been principally confined to the 40 in driving cross-cut east of engine-shaft with all possible speed. The ground is still of a very promising character for tin; we have intersected a cross-course bearing muddle, copper, and tin, leading towards the great deposit gone down below the 30, which point we have not as yet arrived at, but we have every reason to believe in a short time this mine will be a good dividend-paying property.

**KIRK MICHAEL.**—R. Rowe, July 27: I have again carefully examined the mine underground. The shaftmen are putting the cistern below the 20 to take the standing lift and preparing new one to go below. I expect this will be done by Saturday night. In the stop in the 20 north the lode is worth 10 cwt. of lead to the fathom. The lode in the 20 south is worth 15 cwt. of lead to the fathom. In the 20, driving south, the lode is 4 ft. wide, with lead throughout, and a highly promising lode, but not enough lead in it yet to value. All the men are to come to the washing-floors. I wish to remark that in the level driven 20 fm. above the lode was small and poor, from 2 to 3 in. wide; but in the present driving we have the large and masterly lode I have just described, and are carrying ore throughout. I think this goes far to corroborate my early views about the mine, and that at a deeper level we shall come upon large courses of ore at and about the junction with the large cross lode. As soon as the new lift is fixed the sinking will be pushed on with all the force we can put into the shaft. On Saturday we sample 40 tons of lead.

**LADY ANN.**—J. Francis, July 26: The Westminster vein, east from Francis shaft, continues 2½ ft. wide, with the same conical compounds throughout, and we have now good patches of ore at the roof, on the heading side, and also spots or eyes of ore about the middle and half-way down from the roof.

—July 27: We have very good appearances in the mine. In the end of the 30 yards level driving east the vein is 2 ft. 6 in. wide, all spar, with a mixture of spotted with lead ore the size of a shilling piece in the centre about 8 in. diameter, and there are also some spots of ore in the roof. The ground could not look more promising.

**LEAD ERA.**—J. A. Ede, July 27: I am glad to inform you that the ground is rapidly improving as we drive in it. The furrow is 28 ft. across, and has a vertical depth of about 3 ft. There is some very nice spar interspersed throughout the ground, and for some time I have not seen anything more favourable.

**LLANDEGLA.**—H. Hotchkiss, July 27: The 36 yard level, west of whin-shaft, upon the middle lode, is now going on with better speed than for the last fortnight; the lode is still large and promising, and we are meeting with spots of lead ore in the lode. Near the roof there is a little more stone coming in the spar, and a little water is also beginning to make its appearance. I look upon our prospects here as very encouraging.

**MARKET VALLEY.**—W. George, F. Renals, July 26: We beg to hand you the following setting report:—To drive cross-cuts north and south in the 160, from Salisbury shaft, by nine men, at 30¢ per fathom. To sink a winze below the 80 on Rosedown lode, by four men, at 18¢; lode yielding 3 tons of ore per fathom. To drive the 90 west, by nine men, with boring machine; lode worth 1½ ton of ore per fathom. Ground driven last month 8 fms. 2 ft. Two stops in the back of the 40, by four men in each: No. 1 at 4¢, yielding 2½ tons; No. 2 at 3¢. 10s., yielding 1½ tons of ore per fathom. To drive the 40 west, by four men, at 3¢; lode rather disordered by a horse of granite, which we think will soon wear out again, now yielding about 1 ton per fathom. To drive the cross-cut south in the 20, by four men, at 14¢ per fathom. [We have just crossed another small branch, from which there is a little water issuing, but not of much consequence. There are four men employed in clearing a run in Marke Valley adit. We have 16 pitches, set to 35 men, at tributes varying from 10s. to 13s. 4d. in 12.—] Whist Jenkin: We have not been able to throw much more light on the workings here since we reported for the meeting, although the water has been further lowered, but there is a great deal of settlement in the workings, and before more can be done we must clear one of the shafts for ventilation, and to get away the stuff; this we have started with six men, leaving two men to clear away some of the settlement for a few days, or until they are able to work in the shaft.

**MELLANEAR.**—John Gilbert, July 27: The ground in the 30 cross-cut, south of Gundry's shaft, is much harder for driving, and is getting mixed with patches of elvan. We think we shall soon meet with the elvan course that passed through Gundry's shaft in the 80. The lode in the 60, west of shaft, is 2 ft. wide, and yielding some copper ore, but not sufficient to value. We think it advisable to put these men to drive a short cross-cut south, to see a part of the lode that went off in that direction, about 30 fms. behind the present end. We have cut small branch of copper ore about 3 in. wide in the 70 cross-cut, driving north from the main lode; this branch is dipping south rather fast, and we think it must be a dropper from the north lode, which ought to be very near by this time. The lode in the 80, west of Gundry's shaft, is 2½ ft. wide, and yielding ½ ton of copper ore per fm., and letting out a little more water. The lode in the 80, west of shaft, is 3 ft. wide, yielding 1½ ton of copper ore per fathom. No. 1 lode, in bottom of this level, is still showing a fine character, and yielding 4 tons of ore per fm. The lode in the 110, west of Gundry's shaft, is 4 ft. wide, and yielding 2 tons of ore per fm.; we have communicated a rise in the back of this level, a little behind the end, in a lode 5 ft. wide, which is yielding 3 tons of ore per fm. In the 110, east of shaft, the lode is 4 ft. wide, and yielding 1½ ton of ore per fathom, and looking very promising. There is no change in the ground at Gundry's shaft, sinking below the 110; it is now down 10½ fms. below the level, and we purpose sinking a 12 m. lift, which we are making on to complete as soon as possible. There is nothing new in either of the bargains at the old engine-shaft, and the stopes throughout the mine are yielding just the same as last reported.

**MONA.**—Wm. Hughes, July 23: I have no change of importance to report. The tribute pitches are, taken generally, quite as good as when last reported upon, and two of the most important in the mine look exceedingly well, and appear to be improving from day to day. At the 55 one pitch alone will turn out 100 tons of 5 per cent. ore this month. The mine looks very promising, and we are able to open out the ground now worked in greater depth. I hope to see our raisings increase very considerably. They increase every month. We have now four furnaces running down into regular day and night, and I hope that the next sale will be for a much larger quantity than any yet sold during a month. The quality of the ore has also improved. At the bluestone workings I have to report a considerable improvement. It appears as if this great deposit were opening out far to the east of anything we have yet touched, and if the present promising appearances are maintained we shall soon be turning out a much larger quantity of this mineral. The driving east in this part of the mine is still in ancient workings, the existence of which has never before been expected. This proves that the eastern portion of the mine was worked to a shallow extent at a period so remote that we do not at present possess any record of the operations. These workings extend towards the great mass of gossan from which we have recently sold cargoes of iron ore, thus to a great extent proving that the great open-east deposits trend eastward thus far. Our surface operations have proceeded with regularity, but the weather has rather interfered with the drying of coals. Precipitate goes down to the smelting works regularly, and everything is in full swing of working. We have just sent away 35 tons of regulus, which will make about 50 per cent. produce. Taken altogether, the mine looks very encouraging.

**MORFA DU.**—T. Mitchell, July 28: The various points of operation here are of the same value as given in my report last week. We have not yet holed the winze below the 48, but a strong motion is being felt in the ground on the opposite side, while the men are working, and we are daily expecting to effect communication.

**NEW WEST CARADON.**—N. Richards, July 27: The lode in the 42, west of Hallett's cross-course, will yield about 1 ton of copper ore per fathom. The same lode at this level, east of cross-cut, will yield ½ ton of ore per fathom; this level is being driven towards West Caradon, but is not extended far enough to reach the shoot of ore in the rise in the back of this level, the lode in which is over 3 ft. wide, and will now yield from 2 to 2½ tons of copper ore per fathom. We have now proved that this is the main lode missed in the shallow levels by the former workers, and if the lode continues to open up as we expect from present appearances, we shall soon open up profitable ground both in this mine and West Caradon. We are pushing on the 38 cross-cut, south of Hallett's shaft, as fast as possible, and hope to hole before our next setting, soon after which we shall commence drawing and dressing the ore from this mine.

**NEW WEST GOGINAN.**—A. Francis, July 27: Poulter's shaft has been sunk and securely timbered from surface to a depth of 7 fathoms on the line of the Goginan lode. What we have passed, and are still passing through, resembles the bed of a river, in which we find some of the finest limestones I ever saw. The only similar instance that has occurred in this country was the sinking of Francis's shaft at Cwmystwith, where, after some perseverance, and when they got to the lode, they were rewarded with the richest course of ore worked in Cardiganshire for the last 50 years, and I have no hesitation in expressing it as my firm belief that a similar result will be obtained here before we penetrate into the vein 15 fathoms. As the water is naturally quick, every attention will be paid to the cutting off of all surface water that can possibly penetrate through the ground, and every attention will be paid to all matters so as to get down as speedily as possible, and thus prove the correctness of my opinion or otherwise. I have no fear of its turning out a great and a lasting success.

**NEW WHEAL PEEVOR.**—W. T. White, July 27: In driving the adit level east, on the lode recently cut in the cross-cut north, in the western part of the mine, we find it is improving very much in its appearance and character generally. It is about 18 in. wide, and is a strong, well-defined lode. I have a good opinion of it that when a dropper or feeder falls in with it something good will be found. The lode in the adit end, west of eastern shaft, is without change. The ground in the cross-cut, driving north at this level, is still of a most congenial character, and I have a very favourable opinion of the lode when intersected in ground of this nature.

**NORTH D'ERESBY MOUNTAIN.**—R. H. Vivian, July 28: The shaft continues to go down at a fair rate; the water has not increased very much yet, so that we shall be able to sink a good depth for a level, and now that we have proved the lode and cut into the footwall—which we find to be a good, sound clay-slate rock—we are confident that the lode will be a good one, and the inclination may be. The lode is of the same kind of nature as hitherto, mixed with lead and blende throughout, and worth ½ ton of lead ore per fathom. The driving north shows no signs of falling off, but maintains its value for lead ore quite equal to my previous reports. The mine, on the whole, is improving, and our prospects are very encouraging.

**NORTH GREEN MURTH.**—Wm. Vipond, July 22: There is no change to report from the end of the lower level. It is going on as usual. In the 90¢

level the men are working on the lode, and are seeing with some bearing the level near open cutting upon a vein of Haldon. The vein the low of the smith on a vein at 42¢ per fathom.

**NORTH H.**—The skip room stuff accounts below the 50 and 60 cwt. of muddle, and also some water-level, this level is of the same value as improved in yielding 7 cwt. to see if the advance of the lode state by driving the shaft. The castings menace to fix the NORTH H. my last report the lode, east, where with carbon yield at present tribute ground a yield of 10 improved in other points the lode is in a position to dilution effect water, which you the men is now down the product, hope for the lode, which has also been shaft is do which we h good and po are very ne condition.

**NORTH MINES.**—The lode 13 fms east of this are encourage fortnight importance, and we hope to see the lode in the 80, driving are sanguine point; in the No. 1 stop work for ore winze, is p fathom, arsenical ore, is lo fathom. No. per fathom ing 20 tons shaft west bottom of the PANDOL opening up 100 very wet, and stopes in the lode, the lode of the sha is entirely run along per cubic f ground bet the stopes and other ore for the 30 blende

leader part 6 in. wide interspersed with sulphide of silver. We have high expectations of this point, as we consider we have indications of small branches of the old Harrowbrow lode, and have strong reasons to believe we are near the junction of the two lodes. Fair progress is being made in sinking Bennett's



California, 1½ to 1½; the telegram received this week states that 300 tons of milling ore have been crushed during the week, value \$3000 (6000).

Missouri, 10 to 10½; advices received state that the sinking of the shafts is being proceeded with. The machinery for dressing ore is working in a perfect manner. Everything is looking well throughout the mines, and very promising for deeper developments.

Kapanga, 3 to 4; the manager advises by telegram that sinking the shaft and driving towards Scody's Reef in the Golden Point ground proceeds splendidly.

Michipicoten, 1½ to 1½; advices are due from the island on Tuesday, and will be published in next week's Journal.

Hungarian Copper, 1 to 1½; advices from the company's manager, Mr. Joseph Varga, dated July 15, report satisfactory progress.

In Lead Mine Shares there has been an almost total absence of business. Van, 8 to 9; the 120 end west and the 15 end east are both showing the same favourable indications as when last reported upon. No change elsewhere.

Pant-y-Mwyn, 1½ to 2½; the 22, west of Modlyn, is rapidly opening out into a powerful, well-defined and congenial lode, which is likely to be cut into the rich ore found in the levels above, and in about three weeks the main body will be cut.

In diamond mining shares there has been absolutely nothing doing. The Stock and Share Auction Company reports a sale of Kimberley North Blocks at par (6½ paid); but as the selling price of these shares as quoted by the holders of the majority of them is but 5½ to 5½ 10s. and they are unsaleable at that, the purchaser who paid 6½ for the privilege of incurring another 4½ liability would appear to have had an interest in supporting the market, and ought to be "named" for the benefit of the public. The Anglo-African are going to apply for a settlement on the Stock Exchange. The quotations (sellers' prices) have only been altered in a few cases:—change. The Anglo-African are going to apply for a settlement on the Stock Exchange. The quotations (sellers' prices) have only been altered in a few cases:—change. The Anglo-African are going to apply for a settlement on the Stock Exchange. The quotations (sellers' prices) have only been altered in a few cases:—change.

The Stock and Share Auction Company report that amongst the prices obtained at their sale to-day were: Cardiff and Swansea Smokeless Steam Coal Company 10½ shares (5½ paid), 27s. 6d.; South London Tramways Company 10½ fully-paid shares, 8s.; Hornachos Silver-lead Mining Company 10½ fully-paid shares, 10s. each; East Chiverton Mining Company 10½ shares, 21s.; Kimberley North Block Diamond Mining Company 10½ shares (6½ paid), par; Gorseid and North Block Consols Mining Company 2½ 10s. fully-paid, 33s.; Date Coffee Company 2½ fully-paid shares, 3s.

At the Calais Tramways meeting on Thursday the Chairman, in moving the adoption of the report, said that he had just returned from Calais, and had thoroughly inspected the lines, stud, and cars, and he had much pleasure in fully confirming the manager's report in every respect. The stud of horses was in perfect condition; the cars had been fresh varnished, and looked as good as new, and the whole service reflected the greatest credit on Mr. Gabriel and the company. A dividend for the half-year at the rate of 5 per cent. per annum was declared.

It is announced that a valuable discovery of slate has recently been made on property owned by Mr. J. J. Vickers, of the Vickers Express Company, Toronto, Canada, within 11 miles of Fort William, Thunder Bay.

The United Asbestos Company have removed their offices to 161, Queen Victoria-street, and request that in future communications may be sent to the new address.

GAS SHARES.—The principal business in these shares, according to this evening's report of Messrs. W. L. Webb and Co., of the Stock Exchange and Finch-lane, has been in Brentford Consolidated, 160 to 160½; Continental Union, 7 per cent. pref., 25½; European, new, 9½; Gaslight and Coke, A ord., 18½ to 19½; ditto C. ord., 22½; ditto A. ord., 17½; ditto 4 per cent. pref., 10s. 10s.; Imperial Continental, 192 to 192½; Monte Video, 14½ to 15; Stock Metropolitan, B, 184 to 184½. For closing prices: see list on the last page of Journal.

INSURANCE SHARES have, according to this evening's report of Messrs. W. L. Webb and Co., of the Stock Exchange and Finch-lane, been dealt in as follows:—City of London Fire (Limited), 1½ to 1½; Commercial Union, 25½; Employers' Liability, 1½ to 1½; Fire Insurance Association (Limited), 4½; Marine (Limited), 28 to 28½. For closing prices see list on the last page of Journal.

TRAMWAYS.—The closing prices of this evening, as quoted by Mr. W. Abbott, of Tokenhouse-yard, are given in tabular form in the 12th page of Journal.

RAILWAY AND GENERAL MARKETS.—Referring to the course of business done to-day during official hours (11 to 3) Mr. Ferdinand R. Kirk, S. Birch-lane, writes:—"Opening: In addition to yesterday's progress, there is a further important recovery in the American market. Stock is plentiful, and those who bought largely on Wednesday—when Eries fell at one period below 4½—were wise in their generation, and see a fair profit even now. Buyers are giving 8½ this morning, and are paying enhanced prices for Illinois Central and Reading. Turkeys are sold at 16s. and Spanish at 27½. Trunks are being actively bought, the Seconds are up ¼, to 90, already. Thirds being ½ better, and Ordinary ¾. Richmonds continue strong on the favourable verdict against the Albion. Closing: Dullness again prevailed in Sheffield. The ordinary stock paying nothing is double the price of Grand Trunk Third Preference, and the Deferred, which never will pay anything, is more than double the price of Grand Ordinary. Prices of Wales, ¼ to ¾; Pestarena, 3s. to 5s.; York Peninsula Preference, ½ to ¾; Port Phillip, ¼ to ¾.

Messrs. PICKLEY and ABELL—GOLD: The enquiry for the Continent has continued, and bars and coin to the value of 625,000l. have been withdrawn from the Bank; the only amounts sent in being 170,000l., sovereigns, from Australia. The arrivals have been: 194,340l., per Khiva, from Australia; 29,000l., per Moselle, from West Indies; 61,070l., per Washington, from Central America; total, 284,410l.—SILVER: The arrivals of the past week have been small, comprising only 25,000l. from New York, and 40,000l. from the West Indies. The demand for export has been but small, and the Rosetta has taken only 6600l. to Bombay and Alexandria. The price which we quoted in our last Circular as 51½d. improved for a day or two to 51½d., but may now be stated at 51½d. per oz. standard.

Application has been made to the Committee of the Stock Exchange to appoint a settling day in, and to allow the following securities to be quoted in the Official List:—The Anglo-African Diamond Mining Company (Limited) shares; the Taltal Railway Company (Limited) shares; the Drake Walls United Tin and Copper Mining Company (Limited) shares; Quartz Hill Consolidated Gold Mining Company (Limited) shares; Silver Peak Mining Company (Limited) shares; the Wentworth Gold Mining and India Estates Company (Limited) shares; Trinidad Government Four per Cent. debentures (£100,000); Indian Consolidated Gold Mining Company shares; City of London Marine Insurance Corporation (Limited) shares; Natal Land and Colonisation Company (Limited), 10,000 Eight per Cent. preference shares.

BRATSBURG COPPER MINES.—In his late professional visit to these mines Mr. Loam was accompanied by a friend—a well-known practical man, who for 30 years managed one of the largest mining concerns in this country, from which he gave the shareholders about three millions of profit. This gentleman took the opportunity "from curiosity" to inspect the Bratsburg Mines, and being asked for his opinion of them, has written the following report:—

I have just returned from Norway in company with my friend, Mr. Loam, who was visiting the Bratsburg Mines, with a view of applying some boring and winding machinery. As you have requested me to say what I think of the mines I have much pleasure in making the following report.—Through curiosity I went underground with Capt. Daw and Sons, and from what I saw I think the mines a valuable property; and, considering the small amount of ground at present being worked on, they are making large profits. The Hoffnung lode, on which great stress is laid in the report as having a great reserve, I saw myself, and do not think it has been over-estimated (in one part of the lode only, 22,774, see p. 32 of prospectus), and with good boring and winding machinery the profits will be increased also. I was glad to see the No. 2 level, which had been driven through a dead piece of ground, and has come into a piece of ore ground of splendid quality. The lodes are numerous in the mine, and amongst them I may mention the Nesmark; this lode, although not much worked, I believe will have a great future before it, as I think it a very large and promising lode. I with Captain Daw that the return of ore depends on the number of men employed, as there seems to be plenty of ore ground to work on, and very large profits to be made at the present price of copper. I feel confident that you will make large returns when you introduce winding and boring machinery. As I have been the manager of large and very profitable mines for upwards of thirty years I can speak from experience. I understood from Mr. Loam that he would recommend a 200-horse power turbine; this would give actual 100-horse power by compressed air. This being done you have ample power for rock-drilling and winding, and will enable you to carry on the mine on a more extended scale. I was much pleased with my visit to the mines, and have no doubt but the shareholders will reap ample returns. It is a stable (permanent) mine, and not a mine for the day. So confident am I in the success of the mines that I intend to take some shares in it myself.

Nothing can be more satisfactory than such a report from an independent authority. The facts and figures speak for themselves, and the shareholders must be congratulated on possessing so magnificent a property.

EAST ROMAN GRAVELS.—The 109 is still worth 2 tons of lead ore per fathom, and in the 97 they seem to be approaching something new. The month's sampling is 40 tons of lead and 20 tons of blende.

TANKERVILLE CONSOLS.—They have drained Pennerley shaft to the bottom (130 fathoms), and in the 80 west, on Warm Water lode, they have met with a run of ore ground 20 fathoms in the roof, and a lode in the bottom 8 fathoms long, worth 1, 2, and up to 5 tons

per fathom. They have 11 men already at work on this stope, and will increase the number to 18. A cross-cut in the 120 is within a few feet of cutting this ore ground. Bog is drained to below the 70, and from Tankerville the monthly sampling is 75 tons.

WEST KITTY.—The meeting of shareholders was held at the mine on Tuesday. The attendance was very large, as it was anticipated that a favourable statement would be made by the managers. The account presented, however, surpassed the most sanguine expectations, for the tin obtained from rising and driving alone amounted to 30 tons and realised 1707l. 9s. 9d.; thus showing a considerable surplus over ordinary expenditure, which surplus, however, had been devoted to additional stamping power. The balance of receipts over expenditure, as shown by the banker's book placed on the table, was 1534l. 8s. 2d., and there were no liabilities due and unpaid. Of course it was not possible to make a call under these circumstances, and this was an additional cause for congratulation. The manager reported that the mine never looked better than at the present moment, and we present our readers with a verbatim account of the meeting in this week's issue. The natural outcome of all was that Mr. John B. Reynolds was made permanent chairman of the company.

WEST POLBRENN.—The meeting of shareholders in this company was held at St. Agnes, Cornwall, on Tuesday.—Mr. John B. Reynolds presided. The audited balance-sheet showed that the calls on all the shares in the company had been paid, and that the balance in the bankers' hands amounted to 2997l. 8s. 2d., after the payment of all liabilities up to date. The agent's report was highly favourable, and indicated that they had but a short distance to drive to cut the Wheal Kitty and West Kitty rich lode, and that on this lode they had a run of ground of about 600 fathoms extent. The mine adjoins New Kitty, which is immediately adjoining West Kitty, and these three properties promise to be a very rich cluster of mines. Considering the balance in hand, there was not likely to be any deficiency during the next four months' working, therefore no call was made. A verbatim account of the meeting appears in another column, which is full of interest.

NORTH WALES FREEHOLD COPPER MINES AND SMELTING COMPANY.—An interesting exhibition of copper ores has taken place for the last three days in Bartholomew House, London, close to the Bank of England. The ores exhibited, which were of a very rich character, have been produced from the North Wales Freehold Copper Mines, and if the bulk be at all equal to the sample, it must be obvious to every one acquainted with the rudiments of mining that the new undertaking has a brilliant future before it. The exhibition comprises from three to four tons of ore, all of which Capt. Boundy, one of the engineers, informed us has been taken from points no deeper than the 40 fathom level. The astonishment to the large number of practical gentlemen who have inspected these samples is that ores so rich should have been taken from levels so shallow. The average percentage of copper for the whole of the United Kingdom is 10 per cent., but the product here exhibited would average not less than 20 per cent. It is the opinion of some of those who have visited the mines that justice has not been done to them in the prospectus, and those who have inspected the samples do not hesitate to declare that they are the finest ever seen. It is a great feature in favour of the North Wales Freehold Copper Mines and Smelting Company (Limited) that the property is freehold, and it is also announced that quarterly dividends will be paid.

LEAD ORES.				
Date.	Mines.	Tons.	Price per ton.	Purchasers.
July 21—	United Van Consols.	80	£8 0	Nevill, Druce, and Co.
22—	Minera	100	9 6	Walker, Parker, and Co.
—	ditto	50	9 2 6	ditto
—	ditto	50	9 7 6	ditto
25—	Foxdale	50	11 8 0	Sheldon, Bush, and Co.
—	ditto	50	11 8 0	Panther Lead Company.

BLENDE.				
Date.	Mines.	Tons.	Price per ton.	Purchasers.
July 22—	Minera	80	£3 19 0	Swansea Vale Company.
—	ditto	74	3 17 6	ditto
—	ditto	70	3 17 6	ditto
—	ditto	70	3 6 6	Crown Zinc Company.
—	ditto	63	3 5 6	ditto
—	ditto	70	3 4 0	Dilwyn and Co.
—	ditto	65	3 4 0	ditto
—	ditto	28	3 0 0	Swansea Vale Company.

COPPER ORES.					
Sampled July 6, and sold at the Royal Hotel, Truro, July 21.					
Mines.			Mines.		
	Tons.	Price.		Tons.	Price.
Devon Great Consols.	127	£0 18 0	Gunnislake (Oliters).	92	£5 15 6
ditto	102	1 12 0	ditto	87	6 9 6
ditto	100	1 11 6	ditto	84	6 1 6
ditto	97	1 11 6	ditto	68	6 9 6
ditto	83	1 11 6	ditto	65	6 8 6
ditto	81	0 15 0	Marke Valley	60	2 12 0
ditto	77	4 10 0	ditto	44	2 6 0
ditto	65	1 11 6	ditto	43	1 14 6
ditto	51	1 11 6	ditto	31	3 0 0
ditto	45	5 9 6	ditto	30	1 16 0
South Caradon	100	3 18 0	ditto	12	6 1 6
ditto	95	4 12 0	Glasgow Caradon	76	3 16 6
ditto	93	4 15 6	ditto	70	2 15 0
ditto	62	5 18 0	ditto	64	3 9 0
ditto	50	9 14 0	Bedford United	80	3 3 6
ditto	10	18 11 0	East Crebore	67	2 18 0
TOTAL PRODUCE.					
Devon Great Con.	808	£1536 16 6	Glasgow Caradon.	200	669 10 0
South Caradon	410	2307 7 6	Bedford United	80	252 0 0
Gunnislake	396	2548 7 6	East Crebore	67	195 19 6
Marke Valley	210	525 5 6			

Average standard	£ 89 2 0	Average produce	7½
Average price per ton	£ 14 0	Quantity of ore	2171 tons
Quantity of ore	2171 tons	Quantity of fine copper	157 tons 4 cwt.
Amount of money	£8035 6 0		
LAST SALE.—Average standard	£ 90 9 0	Average produce	6½
Standard of corresponding sale last month	£ 94 16 0	Produce	6

COMPANIES BY WHOM THE ORES WERE PURCHASED.		
Names.	Tons.	Amount.
Vivian and Sons	547	£1923 13 0
Grenfell and Sons	462	1929 15 9
Nevill, Druce, and Co.	454½	1504 12 3
Williams, Foster, and Co.	553	2012 11 0
Mason and Elkington	154½	664 14 0
Total	2171	£8035 6 0

Copper ores for sale on Thursday next, at Tab's Hotel, Redruth—Mines and parcels.—Mellancar 516—West Tolgus 130—New Cook's Kitchen 92—West Seton 57—Great Crinnis and Carlyon 45—Botallack 41—Wheal Comfort 23=304 tons.

ON DEMANDE, UN INGENIEUR ANGLAIS, sachant le Français, POUR LES MINES D'OR DU VENEZUELA. S'adresser, à P. F. SIMON et Co., 82, Queen-street, Champs-Élysées.

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PARTNER WANTED, to ACQUIRE an UNUSUALLY RICH LEAD SETT in FLINTSHIRE. Mine thoroughly proved. Apply to WRIGHT and MARSHALL, Solicitors, Birmingham.

FOR SALE, the WHOLE or PART:—

50 Bwlch United, £2. 100 Old Shepherds, 5s. 120 Almada and Tiritio, 6s.

100 West Lisburne, £1 5s. paid, 2s. 6d. 300 Hungarian Cop., £1 paid, 14s.

70 Wheal Coates United, 100 La Plata, £1 5s. 50 Mona.

£1 5s. 50 Wheal Elizabeth Tin, 100 Ooregum, 16s.

100 Sentein, 11s. 100 Van and Glyn Amalgamated, 6s. 6d. 100 South Indian Gold, £2.

120 Pierrefitte, 11s. 50 ditto, pref. 100 Wheal Sisters.

60 Tankerville Consols, 14s. 6d. 100 Wheal Jewell, 14s.

12s. 6d. 50 ditto, 100 West Caradon, £1½.

50 East Roman Gravel, 100 East Blue Hills, 11s. 100 New Zealand Kapanga, 7s. 6d.

125 South Devon United, 250 West Caradon, 10s. 100 New Cook's Kitchen, 8s. 6d.

£1½. 300 New West Caradon, 10s. 150 West Crebore, 9s.

40 West Kitty, £5. 300 East Crebore, 6s. 10 New Cook's Kitchen, 8s. 6d.

50 Tin Hill, 22s. 6d. 300 West Devon, 15s. 10 New Cook's Kitchen, 8s. 6d.

120 Mounts Bay, 5s. paid, 150 West Crebore, 9s. 10 New Cook's Kitchen, 8s. 6d.

2s. 6d. 150 West Crebore, 9s. 10 New Cook's Kitchen, 8s. 6d.

H.W. has also FOR SALE, and which he can specially recommend for investment as also for the rise in price, 4750 Ruby and Dunderberg, 10 per cent. mortgage debentures. Dividends payable half-yearly (June and December), with option of conversion into ordinary shares at par until June, 1882.

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N.B.—Advice given as to what to buy, sell, and avoid from personal and practical knowledge of the Cornish, Welsh, Irish, and Isle of Man mines. Parties investing in Welsh mines will do well to consult H. W. before concluding purchases.

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TREVINE CONSOLS.—Attention is called to the report in this day's Journal. An important rise in the price of shares must take place—price 22s. 6d.

MESSRS. J. TAYLOR AND CO.,

MINING ENGINEERS AND INSPECTORS

The SHARE LIST will CLOSE on FRIDAY, August 5, for LONDON, and August 6, for the COUNTRY.

### A FREEHOLD INVESTMENT—NO ROYALTIES.

A dividend at the minimum rate of 20 per cent. per annum is guaranteed by the Vendor during the first year of the company's working, secured to the satisfaction of the Directors by deposit and investment of £30,000. 55,000 Shares of the present issue have been taken by the Vendor in part discharge of purchase money (this being the extreme limit to which the rules of the Stock Exchange allow the Vendor to become a Shareholder). 40,000 Shares have been already privately applied for, leaving a residue of 70,000 Shares, which are now offered to the public at par. The remaining capital will not be issued under the Company's Articles, except at a premium of not less than £1 per share. Quarterly dividends will be declared, the first payable within four months after the Mines and Works are taken over. Interest at the rate of 5 per cent. per annum will be allowed to all Shareholders on amounts paid in advance of calls.

## The North Wales Freehold Copper Mines & Smelting Co.

(LIMITED.)  
INCORPORATED UNDER THE COMPANIES' ACTS, 1862 TO 1880, WHICH STRICTLY LIMIT THE LIABILITY OF EACH SHAREHOLDER TO THE FIXED AMOUNT OF HIS SHARE.

CAPITAL £250,000, IN 250,000 SHARES OF £1 EACH.

PRESENT ISSUE, 165,000 SHARES AT PAR.

2s. 6d. on application, 2s. 6d. on allotment, 5s. one month after allotment, and the balance as required, but with an interval of not less than three months between each call.

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R. MAXWELL FABRIS, Esq., Merchant, 16, Gresham Street, London.

\* HENRY H. FANSHAW, Esq., East Dulwich, Surrey, and Carlton Club.

Sir HENRY V. GOOLD, Bart., Croydon, Surrey.

HENRY GIELGUD, Esq., Merchant, 65, Gracechurch Street, London.

\* Will join the Board after allotment.—With power to add to their number.

CONSULTING ENGINEERS—JAMES NANCARROW, Esq.—MARTIN BOUNDY, Esq.

BANKERS—Messrs. BARNETTS, HOARES, HANBURY, and LLOYD, 60, Lombard Street, London, E.C.

SOLICITORS—Messrs. WILKINS, BLYTH, and FANSHAW, 10, St. Swithin's Lane, London, E.C.

AUDITORS—Messrs. CHAS. FITCH KEMP, FORD, and CO., 8, Walbrook, London, E.C.

BROKERS—GEORGE F. DAVENPORT, Esq., 7, Draper's Gardens, Throgmorton Street, London, E.C., and London Stock Exchange.

Messrs. BLACK and ROBSON, 14, Princes Square, Glasgow, and Glasgow Stock Exchange.

SECRETARY—Mr. LEWIS J. SEYMOUR.

REGISTERED OFFICE—BARTHOLOMEW HOUSE, BANK OF ENGLAND.

#### OBJECTS OF THE COMPANY.

This company has been established for the purpose of acquiring and working the freehold mineral estates, including valuable copper and lead mines, known as Derwen Deg, Machernig, and Pannol Gwyn, in Carnarvonshire, North Wales. They are in active working order, and situate on the main road, about a mile and a half from the town of Conway, and close to the Isle of Anglesey, in which are the celebrated Mona Mine and the Pary's Mountain.

UPWARDS OF £40,000 ALREADY EXPENDED.

#### PRESENT BUSINESS.

Upwards of £40,000 has been already expended upon these mines, which extend under some 20 acres, and the result of this expenditure, which has been most judiciously made, under the advice of the most skilled mining engineers of the day, is that the mines have been thoroughly opened out, are absolutely free from water, in excellent working order, and sending ores to market. The company in purchasing them thus secures a business which gives an immediate return for the capital invested.

The machinery at the mines (which are within easy access from London, Manchester, or Liverpool, and are open to the inspection of intending shareholders) is more than sufficient for the present business, and a large extension of it. It is impossible within the limits of this prospectus to give a full detail, but the directors would mention, as giving an idea of its amplitude—Four hoisting and pumping engines, being each of 14 horse-power, besides two portable engines of 10 horse-power, and a Selden's steam pump; boilers, steam winches, steam air compressors, and also water-wheel and buidles; three rock drills, patent stone breakers, patent pulverisers, jiggers, and crushers, with a great quantity of general plant and mining appliances.

The market value of the ores, and the prices fetched, appear from the reports. The sales have been made at the smelting works of the Marquis of Anglesey, at Amllwch, and at Swansea and St. Helen's. The freights are very light. The ores so sold are certified to have given in some cases as much as 30 per cent. produce, and realised upwards of £16 per ton. The average produce for the United Kingdom is only 10 per cent.

OUTPUT.—COST OF LABOUR AND DRESSING.—PROFIT, EXCLUSIVE OF THAT ON GOLD AND SILVER.

The output from these mines, only employing 200 men, with the usual machinery and appliances will, it is estimated, when working at the 60 fathom level, be 1200 tons per month; the inclusive cost of labour and of dressing the ore for the market (estimated at about £3 per ton), leaves a profit, assuming an average price of only £11 instead of £16 per ton, of £8 per ton, equal to £96,000 per annum. This estimate omits from view altogether the profits on the sale of gold and silver and the working of the lead lodes.

RICHNESS OF THE ORE.—PROFESSOR RAMSAY'S OPINION.

It will be noticed from the subjoined reports that the lodes are true fissure veins, bearing fine yellow and brilliant "peacock" copper, and that the ores are a very rich sulphuret, becoming more rich and widening out the deeper they go down.

The directors think it right to mention that they have his authority for stating that Professor Andrew C. Ramsay, the Director-General of the Geological Survey of the United Kingdom, has made a recent visit to these mines. The Professor, it appears, examined the outcrop of the main lode, which was found running nearly north and south, and of great width. He had selected and set apart for the Museum of Geology specimens of the copper ore then being raised from the numerous workings, which were visited after ascertaining the position of the veins of ore appearing on the surface. These veins extended at the bottom to the full width of the level; not less than 6 ft. from the footwall of the lode, the hanging-wall of the same not having been reached. This hanging-wall is some 46 ft. east He next visited what is known as the No. 1 sump, and here also found the veins of ore seen on surface and in the adit level; but again much richer and more massive. A number of blasts were made in this sump under the Professor's direction and in his presence, and on each occasion the quartz matrix was found richly charged with copper pyrites. Portions of the ore so obtained were taken away by the Professor for the collection at the Royal School of Mines, in Jermyn-street, where they have since been inspected by practical mineralogists; they speak highly of their value, and confirm the statement that they largely exceed, in fine copper, the average of the United Kingdom. He then inspected the deeper parts of the mine, the workings being still upon the veins of ore which had been seen on the surface, but which now filled up the entire level. A number of test blasts were again made, extending over the whole of the ground at this point, with the same satisfactory results. The Professor expresses, it may be added, a very favourable opinion as to the great value and mineral resources of these mines. His inspection took place in the month of May last.

In addition to this entirely independent testimony, the following gentlemen have, at different stages of the development of the mines, inspected and reported upon them. In each case the report was

highly favourable. (The reports can be seen at the company's offices):—Messieurs James Nancarrow, Martin Boundy, Charles Paynter, Robert Morris, Walter Eddy, John Lean, John Howans, John Roberts, and T. J. Evans.

#### FEATURES OF THIS UNDERTAKING.

The two important features of this undertaking, which make it almost unique in the history of British mining, are—

Firstly.—The property is absolutely freehold; and, as the company pays no royalty, and they are their own landlords, the shareholders do not run the risk of some day finding their property forfeited for non-payment of covenants.

Secondly.—All the work of prospecting, boring, and the other expensive labour of searching for the lodes, has been already performed; the whole estate has been tested in every part, and found to be absolutely impregnated with minerals and mineral substances, while the position of each lode has been clearly ascertained, as will be seen from the accompanying map or plan.

The purchase includes the cottages and the workshops on the estate, together with the valuable and expensive machinery already mentioned, engines, boilers, boring machines, and apparatus for dressing and reducing the ores, with ample plant and stores.

SITUATION OF MINES.—NATURAL ADVANTAGES.—LABOUR CHEAP AND ABUNDANT.

The mines themselves are well placed for convenience and economy in working. They are situate on a gentle incline, perfectly free from overhanging ground, whilst at the same time possessing an ample water supply. The surface and bed rock are not hard, and the piercing is found to be comparatively easy. The surroundings town are good. There are no difficult gradients in the descent to the town of Conway. From Conway the ore is conveyed direct to the smelting works either at Amllwch, at Swansea, or at St. Helen's (where there are a large number of such works), and it has a ready and immediate sale at high prices. It should be mentioned that there is not only a good railway station at Conway, but also a shipping port to any part of the kingdom.

The mines also enjoy the advantage of being in a neighbourhood where labour is exceptionally cheap and abundant. It is a matter of notoriety that the Welsh miner is content with far less wages than his brethren in Cornwall or Devon, or any other of the great mining centres; while the close proximity of the port of Conway to Liverpool gives the command of a large amount of Irish labour.

#### LARGE FIELD FOR OPERATIONS IN SMELTING.

There is a large field for the company's operations later on, should it be determined by the shareholders to erect smelting and concentration works, in order to obtain the full amount of the gold and silver which is met with in unusually large quantities in the ores raised in these mines, and so avoid the great waste and loss of profit involved in the system which at present prevails throughout the country. According to the results given by even the present defective system the silver per ton of ore is upwards of 33 ozs., and the gold upwards of 10 dwts. These figures have been arrived at after careful assays of the ores, and are vouched for by Messrs. Johnson and Son, the assayers to the Bank of England and Her Majesty's Mint. It is scarcely necessary to point out the large additional source of income which thus presents itself in the sale of the precious metals, apart from the ordinary sales of the copper ore. It is now known that, by a recently discovered process, the gold and silver can be easily and simply extracted.

There are valuable lodes of lead on the property. These lodes have been opened up and can be worked at a profit; but the main present business of the company is the working and sale of the very rich copper ores.

#### ARRANGEMENTS FOR SECURING SKILL AND ECONOMY IN WORKING.

The directors, who are not unversed in mining operations, are fully alive to the importance of securing skill and economy in the management and working of mines, whatever may be their intrinsic merits, and however large may be the profits derived from them. They purpose, therefore, entering into arrangements with a skilled mining engineer of large experience, under which that gentleman will devote his whole time and services to the affairs of the company, receiving as part of his salary a limited commission on the amount of realised profits.

#### FACTS IN SUPPORT OF ESTIMATES OF PROFIT.

In order to show that the estimates of profits above given are very much within the facts of the case, the results are referred to of independent assays and tests applied in the one case by the manager at the Marquis of Anglesey's Smelting Works, and in the other by Messrs. Johnson and Son. The manager of the Marquis's smelting works states that he was much struck with the ore even at first sight, and that although an assayer of 30 years' standing, he never but once before met with a sulphuret that gave so high a percentage for copper, and that the quality of the copper itself was as good as a smelter could wish to have. The view of the superior quality of the ore is shared by all the practical mining engineers and men versed in the values of these ores, who have inspected the mines, and is expressed in the reports above referred to. They agree in the

opinion that this sulphuret, when separated from its gangue, gives a produce of some 30 per cent. of fine copper. The average of the three kingdoms, as already stated, does not exceed 10 per cent., whilst that of the Cornwall and Devon is not over 7 per cent. of fine copper. This opinion is also practically confirmed by the results of the sales made. Besides the ordinary demand for ores of this description, there is always a great request for them among copper ore buyers and smelters for the purpose of mixing with the poorer ores. Smelters give preference to them over any raised in the United Kingdom, and they command the highest market price. Offers have already been made by smelters of known standing and responsibility to take the entire output of the mines.

According to the reports of Mr. James Nancarrow, and other mining engineers of eminence, and if regard is to be had to the opinion of the President of the Royal School, these mines are practically inexhaustible. As a matter of fact (which is the best means of testing what must always upon estimates contain more or less of theory) it is beyond dispute that the mines already mentioned, the Mona and Pary's Mountain, have paid to their shareholders, in one case, upwards of £4,000,000 sterling, and in another £3,000,000 sterling in the shape of profits from the sale of similar ores.

The directors are anxious not to appear unduly sanguine in their estimate of the profits which will be divisible, but would mention that upon the present capital the figures already given show a profit from the business of from 50 to 55 per cent. per annum. This is more than justified by the experience of the past in the case of other copper mines in this country, including the Devon Great Consols, the shares of which, under similar circumstances, with £1 paid, have been sold for £800 each.

#### RESERVE FUND—QUARTERLY DIVIDENDS.

It has been the habit in these mining operations for the managing body to accumulate profits sometimes for a period of upwards of 12 months before paying dividends. It is proposed in the present case, as the company will have the benefit of the sales of the ores and consequent profits immediately it takes possession of the mines, to give the shareholders the advantage of a speedy division of the profits, and for that purpose, as there are no royalties or rent to be paid, to declare quarterly dividends; after making provision for the reserve fund under the articles. The first dividend will be declared and paid within four months after the company has commenced its operations. A dividend of 20 per cent. as a minimum during the first year is guaranteed by the vendor, and will be secured to the satisfaction of the directors before the completion of the purchase under the terms of the existing contracts.

#### TERMS OF PURCHASE.

By the terms of the purchase the vendor, who is the promoter, and by whom they have been fixed, takes in part discharge 55,000 shares in the company, and in cash the sum of £15,000; £30,000 being retained by the directors, and invested under the provisions in the company's Articles of Association as a security for the fulfilment of the guarantee. There will be no preliminary, promotion, or other legal expenses, except brokerage and the ordinary and proper legal expenses attending the formation and registration of the company; which have been fixed at 1½ per cent. on the registered capital of the company. The following agreements have been entered into:—Two dated respectively the 30th April and the 21st May, 1881, between Walter A. Bradley of the one part, and Henry H. Fanshawe of the other part, and one dated the 21st July, 1881, between the said Henry H. Fanshawe of the one part, and a trustee for the company of the other part.

These agreements and the Memorandum and Articles of Association can be seen at the solicitors' offices.

REPORTS, MAPS, PLANS, AND SAMPLES OF ORE TO BE SEEN AT COMPANY'S OFFICE.

The reports, of which extracts are given, with the maps of the estate, and plans of the mining sets, can be seen at the offices of the company. Several tons of ore, taken indiscriminately from the mines, will also be shown during the time the subscription list is open.

#### CLOSING OF THE LIST.

The subscription for shares will be closed for London on Friday, the 29th of July, and for the country on Saturday, the 30th of July, 1881. In the event of the capital being over subscribed, the directors pledge themselves to allot, *pro rata*, so as to ensure an equitable division among applicants.

Prospectuses may be obtained at the company's offices, and application for shares may be made on the form annexed to the prospectus, accompanied by a deposit of 2s. 6d. per share, and may be left either with the bankers of the company, or with the Secretary, at the company's office. Applications may also be made, accompanied by a cheque or post-office order for the deposit, by registered letter, addressed to the bankers, or to the company at their offices.

In the event of no allotment being made to any applicant, the full amount of his deposit will be returned to him, on production of the banker's receipt.

Application will be made to the committee of the Stock Exchange for a special settling day an official quotation of the company's shares.

#### NORTH WALES FREEHOLD COPPER MINES COMPANY (LIMITED).

Telegrams received from the engineer stationed at the company's mines.—No. 1, July 26, 1881.—The exploring party organised 19 days ago by Captain Boundy have discovered another Champion Lode parallel to the great body of junctions, and about 60 ft. west of same, with leaders of enormous mineral capacity connecting them. Will sketch position, and forward diagrams to-night. Signed JAMES NANCARROW.—No. 2, July 27, 1881.—Several blasts made during the night in new discovered Champion Lode. Ore very rich. Samples sent to London.

**HART'S PNEUMATIC MINERAL SEPARATOR.**

This machine, working on the jiggling principle, concentrates gold and auriferous pyrites, silver, tin, copper, lead, blende, and other stamped or finely crushed minerals, termed fine sands and slimes.

The primary condition for separation of mineral particles differing in specific gravity is that they be free to move in a fluid medium. Air fulfils this condition; water, on the contrary, will pack fine particles together, forming a cake or a paste, which explains the more rapid and more complete separation in air. The multiplication of processes and of machines indispensable in the water system is consequently avoided, with the losses that attend it.

The PNEUMATIC MINERAL SEPARATOR works in accordance with the laws of air in motion resisted, but not obstructed, by the particles under treatment, and is the only single machine which completes the separation of fine sand and slimes.

Patent Rights for Great Britain, India, Colonies, and Foreign Countries for Sale.

Address, "H. P. M. S.," MINING JOURNAL Office, 26, Fleet-street, E.C.

**Notices to Correspondents.**

\* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

THE LIMESTONE OF COUNTY ANTRIM.—The letter from "Another Irish Miner" on this subject shall appear in next week's Journal.

Received.—"V. P." (Plymouth): Very amusing respecting the Lucky Mine, but scarcely adapted for publication.—"H. B." (Calumet)—"L. G." (E. L. M.) (Boston)—"S. K." (Bristol)—"M." (Philadelphia)—"W. J." (C. W.)—Messrs. John Carr and E. Cooke have sent us their report of a Visit to the Corporation of South Australian Copper Mines. Capt. Paul gave valuable information, and induced them to take up other properties—"A. R." (Gatehead) had been anticipated—"J. N." (Conway)—"G. H. P." (Dublin)—Mr. W. Fraser Rae's "Newfoundland to Manitoba"—Mr. H. Fajia's "Portland Cement for Users."

## THE MINING JOURNAL,

### Railway and Commercial Gazette.

LONDON, JULY 30, 1881.

**THE CARRIAGE OF INLAND COAL BY SEA TO LONDON.**

We have on many occasions drawn attention to the great difference that is made in the charge for coal going by sea from the North of England to London, and from the inland districts to the same destination by railway. This is of such a marked character that the fine steam coal of the West Riding and Derbyshire is scarcely known on the Thames, although its quality and great hardness making it particularly well adapted for merchant vessels, especially those going on long voyages. The present price of coal going from the Tyne to the Thames is from 3s. 9d. to 4s. per ton, whilst the rate by railway from Derbyshire and Notts is 5s. 9d. per ton, South Yorkshire 7s. 2d., and Lancashire and Cheshire 7s. 1d. per ton. With such a difference in the rates it is not surprising to find that very little inland coal is likely to find its way on to the Thames from the railways in the Metropolis unless by some means it can be considerably reduced. House coal is also at the same disadvantage as between the sea and railway rates, otherwise the inland qualities would put the sea-borne out of the market altogether. Some time since such a scheme was proposed by Mr. THOMPSON, of London, for sensibly decreasing the cost of carriage of coal from the inland districts to the Metropolis, and the proposal was approved of by a considerable number of the leading colliery owners in South Yorkshire, Derbyshire, and Nottinghamshire, who looked upon it as a means of giving them the relief they have been looking for. Mr. THOMPSON proposes to take the coal from the inland districts by railway as far as Boston, we believe, putting it into sacks, and then sending it forward in fast screw steamers to the Thames by way of Boston Deep. This would certainly effect a great saving in carriage in house or "soft" coal, which would be delivered at a considerably less cost than at present to the consumers. Not only so, for whilst the price would be less the quality would be much better, as each colliery owner would send his coal direct from his own pit, so that there would be no mixing of inferior and moderately good coal, which is known to be the case in many instances at the present time.

The quantity of coal sent by railway to London is now at the rate of 6,500,000 tons a year, and of seaborne 4,000,000 tons, so that there is a wide field open for any scheme by which coal can be conveyed to London at a less rate than it now is, and without so many discharges from the pits to wagons, from wagons to the holds of vessels, then into lighters, and again to depôts and wharfs, and last of all to sacks and carts. The scheme which we are glad to see has just been launched by Mr. THOMPSON seems capable of effecting this and something more. He would secure to the Metropolis coal of good and reliable quality from the most important inland districts at from 2s. to 3s. per ton less than at present at the very least, and in so doing would give but little chance to the North Country house coal, and South Yorkshire alone could supply the London market with at least 1,500,000 tons more coal than at present, whilst Derbyshire could do the same. A rate of 5s. per ton by the proposed route, we should say, would ensure a carriage of coal to commence with at the rate of something like 1,000,000 tons per year, and which would go on augmenting with the carriage power of those who carried out the scheme, to the certain extinguishment of the North of England coal traffic to London. We, therefore, with every success to the scheme of Mr. THOMPSON, and in doing so we believe we are fully expressing the views of the principal colliery owners of South Yorkshire and Derbyshire, feeling assured that it is one that will not only be of the greatest benefit to the inland coal interest and the metropolitan consumers, but a source of safe profit to those carrying it out.

**COAL TAR, AND ARTIFICIAL INDIGO, &c.**

Of the many valuable and beautiful products from coal tar another most important one has been brought into notice, for Dr. Caro has introduced a process by which indigo by artificial means has been brought within a measurable distance of commercial success. The indigo has been reproduced by building it up from its constituents, existing in toulume as a product of coal tar. Recently Professor Roscoe pointed out how identical the two indigos were in their properties. This is following up the discovery made a few years ago of alzarine, the colouring matter of madder. To two German chemists, Graebe and Liebermann, we are indebted for the discovery that alzarine, the colouring principle of madder, was derived from anthracene, one of the hydrocarbons that are met with in coal tar. Their researches caused them to believe in the analogy existing between alzarine and certain bodies of the coal series, and found that it was possible to convert the natural alzarine into anthracene by heating the former with powdered zinc. It was then considered that if the process could be reversed and the anthracene converted into alzarine, the great discovery would be accomplished. This was effected, and the long-sought for alzarine was produced, and it was found in every essential identical with that which had formerly been obtained from the madder root. Unexpected chemical discoveries, it may be said, are often made when not being sought for, and that has been the case with Mr. Perkins, who, in trying to produce quinine artificially, made the discovery of mauve-line. Of mineral colours the most important so far is that of ultramarine, the most highly esteemed and the most largely employed of blue colours with indigo. Its artificial production was discovered in Germany by Gruebin about fifty years ago, but at the same time, and probably quite independently, in France it was being made up for use by M. Guimet. Now we are told the synthesis of indigo has been accomplished by Professor Adolph Baeyer, of Munich,

showing the valuable results of the study of organic chemistry. Indigo is insoluble in water, alkalies, alcohol, and most common liquids, and forms a blue powder, but by combination with hydrogen is transformed indigo white. This rapidly absorbs oxygen from the air in dyeing, and then passes into the blue insoluble indigo, and being held in the fibre of the cloth gives it a permanent blue dye. The production of artificial indigo will have the effect, as has been the case with all other dyes, of greatly lessening the cost of them. Of the many artificial and other dyes it is somewhat singular to find that nearly all of them are manufactured in Germany, and not a few of them have been discovered by German chemists. Germany also excels in the preparations, always kept most carefully concealed, of the carmine of cochineal, and the most beautiful flake of indigo and saffron are prepared in Berlin. It is, however, a notable fact that the raw material from which many of the dyes are extracted in Germany are imported from England, and are taken back in their manufactured state. Indeed Germany sends her dyes to nearly every part of the world, and it is certainly singular with English enterprise and capital in abundance such an important branch of industry, and so profitable withal, has not been started and taken root here, but instead of which we should have to depend upon foreigners for articles of which we are the largest consumers, but which we could produce, in many instances, at a less cost than they could abroad.

**STEEL WHEELS FOR MINES, AND OTHER PURPOSES.**

HADFIELD'S SYSTEM.

The value of steel wheels, especially in mines, as compared with those made of iron, after many tests and trials has now been fully recognised, and from an economical point of view, if from no other, they are undoubtedly the best. Not so long since we saw some wheels made of steel put to the severest of tests, and with what may be termed extraordinary results. A pair of corf wheels were taken a height of at least 40 ft., and then thrown down on some iron plates without in the slightest degree injuring them, or even loosening the fastenings. The blows of a sledge hammer made but little impression, the only indentation or fracture of a slight nature being between the spokes, the weakest part of any wheel. In the making of such wheels a special quality of steel is used, of more than ordinary toughness. Amongst those who have brought steel wheels to a high state of perfection is Mr. Hadfield, the founder of the Hadfield's Steel Foundry Company, Sheffield, and whose productions are known far and wide, not being confined to England, and who, we understand, was successful in obtaining one of the highest prizes at the late Melbourne Exhibition. The wheels have been taken, after being made for some time, and hammered cold, and then placed firmly on an anvil, received 45 ringing blows with a 14 lb. sledge-hammer, and this only resulted in one part being bent, and then the wheel has been put into a smith's fire, straightened, and made equally as good as it was previous to being hammered. It is also stated that a piece may be cut from the wheel, and may be forged out into a chisel, knife, or any similar articles. The company claim that their steel for wheels is superior to any other material for the special qualities in particular—stiffness and tenacity. The wheels have the property of keeping their form and not readily bending out of shape, as is usually the case with inferior qualities of steel after they have been worn down a little, and will, therefore, stand the great and sudden strains experienced in mines without breaking or bending. One set of wheels and axles, we are informed, being fitted with a patent fastener, has been 41,000 miles, carrying 10,000 tons of coal, and after running constantly for about five years they were only worn about  $\frac{1}{8}$  in. on the tread, the wheels being only 9 in. in diameter, and only weighing 14 lbs. each when put into use. This is as strong a proof of the durability of the Hadfield wheels as could well be desired by the most ardent seeker after perfection in wheels for mining purposes, and shows what a long life such steel has as compared even with the best of iron, and show how well they are adapted for all purposes, and more especially, be it said, for mines, where the wheels are constantly on the move. Wheels of any desired size can be made at the Hadfield Works, and lately there were cast at one pair of large spur wheels 10 ft. in diameter, and weighing over 6 tons each. The gearing, being machine moulded, is admitted to be superior and better in every way than that made from patterns, which are liable to warp. By the adoption of Hadfield's patent machine-moulded steel gearing, it may also be said, entire freedom is secured from the costly and serious breakdowns which are so frequently experienced with iron and other gearing, causing serious loss owing to stoppages, &c. An additional advantage in favour of steel wheels is that the decreased weight of the wheels made of crucible cast-steel ensures increased haulage with the same amount of power used. There is also the fact that the materials of which the wheels are composed being of the toughest possible description offers the utmost resistance to wear and tear, and is almost an indestructible material. In concluding our notice of steel wheels, which should commend themselves to all mineowners, coal as well as metalliferous, we find that the Hadfield Company was awarded one of the five medals granted to Great Britain at the Sydney International Exhibition, as well as the gold medal at Paris in 1878, as well as the principal prizes at many other exhibitions.

**CANADIAN RAILWAY DEVELOPMENT.**

Information which reaches us this week from Canada seems to indicate considerable activity in connection with the development of Canadian railways. Thus we learn that subscriptions are now being taken up in order to complete the survey of the Morrisburgh and Ottawa line on both sides of the St. Lawrence. A large amount has already been received for this purpose, and it is expected that instructions for the survey will be given immediately. It is proposed to select a point at which the river shall be crossed by a bridge, and then to run the line from this point through Waddington to Potsdam Junction. If the proposed bridge is constructed it will probably be a high level one. With regard to the Canadian Pacific Railway it is stated that Messrs. Smith, Stephen, Angus, and McIntyre, members of the Syndicate formed for the carrying out of the great line, intend to set out early in August and make an exploration on foot of the line west from Callendar station for some hundreds of miles. The route to be taken by the line has not been definitively determined, but it is affirmed that the members of the Syndicate have no intention to construct a line from the Yellowhead Pass, but will endeavour to effect the passage of the Rocky Mountains by the Howe Pass, or more probably by some more southern opening. About 900 labourers have passed over the Inter-Colonial Railway, bound for Pembroke, to work on the eastern section of the Canadian Pacific Railway. About 350 men are employed in grading and building the Credit Valley Extension from Ingersoll to St. Thomas. The Midland Railway of Canada has fitted out 36 additional cars for the carriage of iron ore. About 1000 tons of steel rails are now on their way from England to the St. Lawrence and Ottawa Railway. As soon as they arrive the line will be completely steel-railled from Prescott to Ottawa. A third rail is to be laid on the Toronto and Nipissing Railway, and the necessary rails are now on their way to Canada.

Such are a few items of current Canadian railway news. The interest of Canadians, of course, appears centred in the construction of the great Canadian Pacific system. There can be no doubt that this vast line must exercise a very great influence upon the future of the Dominion, as it will open out for settlement the enormous region of the North-West, which has hitherto been a *terra incognita*. The balance of testimony collected with regard to the North-West seems to show that it is a fertile and valuable quarter of the world; and if it can be really opened out and inhabited by thousands of industrious settlers, it must tend very greatly to increase the relative importance of Canada upon the North-American continent. We learn that General ROSSER, chief engineer of the Canadian Pacific line, has returned to Winnipeg, after a month's absence in the West, during which he drove over the proposed route of the Canadian Pacific system from Grand Valley to the Saskatchewan. General ROSSER appears to be satisfied with the rate at which the construction of the line is proceeding. The track will be

laid to Brandon by September 10, and at least 130 miles west of that point will be graded before the winter sets in. General ROSSER reports that all along the line are to be seen the camps of the Dominion Government surveyors, who are subdividing. He also states that it is impossible to drive a mile eastward without meeting dozens of settlers who, stimulated by the growing importance of the land and charmed by the appearance of the country, are pushing on to their goal on the Qu'Appelle claims. The General expresses his conviction that the country will be largely settled up even before it is reached by the great line. Another great railway scheme affecting the North-West of Canada is the Manitoba and South-Western Colonisation Railway. Arrangements are stated to be made for the completion of the entire length of this line (312 miles) within three years. Some New York capitalists are reported to be taking an interest in the project. We might continue these details at further length, but we have probably cited sufficient facts to show that a remarkable degree of activity now characterises the work of Canadian railway construction, and that the result must be a very considerable demand for railway iron on Canadian account during the next year or two. We trust that British ironmasters will not lose sight of the opening which Canada seems likely to afford for their products. At present prices it does not appear to us that they need stand in much fear of American competition.

**THE NICKEL PLATING WORKS AT STOCKTON-ON-TEES.**

The art of Nickel Plating is of such importance to the manufacturers of our "island home," Great Britain, and to all the world which recognise elegance of finish combined with durability, that we have ventured to describe the process as carried on at the works of the Plating Company, at Stockton-on-Tees.

These works, known to manufacturers as the Bishopton-lane Works, are of considerable magnitude, and are not merely a small shop, with one or two square tanks only a few feet long, with a man or boy as their attendant, but are in reality works on entering which you at once find you are in one of those giant places which exalt our manufacturing concerns in the opinions of continental nations, and which assert Britain's trade supremacy.

Nickel plating as practised by the Stockton-on-Tees Company is on the system of Dr. Adams's patent process, which permits of a thick coating of pure nickel being deposited, and not simply a film of so-called nickel. The works are, as their name implies, about two minutes walk from the North Stockton station. On entering we find the office on the left side and the receiving-room on the right, which is piled up with consignments of goods from London, Birmingham, Wolverhampton, Sheffield, Bristol, Glasgow, Dublin, and even from the Continent. These goods comprise almost everything in the vocabulary of metal manufactures, from a lady's earrings to steam-engines. There are dish-covers, spoons and forks, cruet, toast-racks, fenders, fire-irons, ash-pans, stoves and stove-fittings, marine engines, fixed engines, locomotive engine parts, carriage door-handles and rails, models and castings of many kinds—indeed, a very motley group, the productions of every industrial centre.

Beyond these we enter the plating shop. This is a spacious building, containing one of Weston's dynamo-electric machines, which for efficiency has not been surpassed. This, humming like a humming-bird, generates the electric current which gives "life" to all the baths. This machine is so powerful that a piece of copper wire placed between the poles was instantly made red-hot. A speed of 900 revolutions per minute is attained by this machine. The baths consist of one of the largest we have seen, and we understand it is the largest in the world; it is over 14 ft. long, nearly 4 ft. wide, and 4 ft. deep. Another is nearly 7 ft., and one is 5 feet. There is a deep bath, especially designed for taking a bicycle-wheel overhead. The potash and hot-water tanks are of galvanised iron, and are constantly heated by a steam jet from the boilers—an arrangement which house-keepers would value. Near these are cyanide tanks, cold-water tanks, and scrubbing tanks.

The platers are skilled men, with a thorough knowledge of chemistry relating to their industry. These followers of Faraday are busy cleaning the articles to be plated, which duty they perform with small brushes and a quantity of finely powdered pumice. The articles are suspended by copper wires, which are then, after undergoing the necessary cleaning, fastened across brass rods parallel with the baths. The electric current is conveyed to these by strong copper rods, and the current passing down the copper wires on to the articles to be plated performs the magical change from tin, copper, brass, steel, iron, pewter, or lead to beautiful white nickel silver. The articles remain in the baths from two to four hours, to receive the deposit from the anodes or nickel silver plates. Each article has to be hung separately, so the labour involved is considerable. Iron and steel articles before nickel plated are coppered in a suitable bath. The articles being "nickelled" are now immersed in the hot-water bath to get "coloured," and on drying are carried by the boys to the polishing shop. This is to engineers the most astonishing. It is here where Stephenson's and Watts' admirers look with wonder. Watt was asked what moved his shop, and replied "Power, Sir," and we ask what is the cause of British trade supremacy, and reply "Power, Sirs." There are wheels and wheels, pulleys and pulleys, belts and belts on all sides, set in motion by a 12-horse power vertical engine. On entering the shop we see two very large solid emery wheels, running 600 ft. per minute, which are used for dressing very rough iron or other work, which can "put a face on work" in a few seconds. Near these are benches, with vices fixed for workmen to file up work which can only be so dressed, whilst in the same locality is one of Fenwick's Patent Polishing Machines, which, worked by a rubber band overhead, is used for dressing large castings or out of the way corners, or even the insides of tubes. This is a spindle, which is made to revolve 2000 per minute, and is worked between two loose handles. It is simplicity itself, but is thoroughly efficient, and no engine shop, foundry, or brass place is complete without one. The polishing lathes surround the shop. These are worked upon by "experts from London, Sheffield, and Birmingham, all prentice hands who know their trade." These lathes are double, with screw-tapered ends of right and left threads, and are exceedingly useful tools. The polishing of articles requires the polisher to skilfully manipulate the articles, so that they receive no damage, for 2300 revolutions per minute are not seen every day in a shop. Brass, steel, iron, copper, and tin, or other metals are here "got up" to perfection.

The company, we may here say, are also metal polishers for firms who do not require plating. The goods before plating are passed to the "polishers," who shine them like highly polished mirrors. After plating, the articles are brought into this shop to be "finished." This class of men—finishers as they are termed—bring out the hidden beauties, and reveal to vulgar vision the attractiveness of pure nickel plating, as practised at the Stockton-on-Tees Works. The "bobs," "dollies," and brushes—two rows, three rows, four rows, and "egg-ends" of these "finishers," with skilful fingers directed by intelligent brains, work wonders.

But we now visit the packing-room. Here are goods being made up for every part of the United Kingdom, as the company pay carriage both ways on all orders. Our surprise is that so large a concern is maintained; but when we see the quality of the work, and its great advantages for beautifying and preserving many articles—indeed, almost every metal article for domestic, general, or engineers' use—our surprise is that it is not more generally adopted.

The Stockton-on-Tees firm in about twelve months have issued nearly 500,000 circulars throughout the kingdom—so they must succeed. We leave the works wishing the Plating Company of the Bishopton-lane Works, Stockton-on-Tees, greater success.

ARUBA ISLAND GOLD FIELDS.—Attention is directed to an article in to-day's Journal upon this subject. It should be a wholesome warning to some capitalists who are looking for immediate profits from the gold fields of India. The directors or home managers of gold mines at the antipodes, it will be seen, are powerless to successfully manage such enterprises unless at the mines themselves the necessary technical knowledge and practical experience be present. It has long been felt that all that was required to ensure the success

of the Aruba Gold Mines was the requisite local technical ability, and it is satisfactory to find that this is now being supplied at Aruba.

### THE GOLD MINES OF INDIA.

#### THE RECORD OF A PERSONAL EXAMINATION.

The knowledge that the secretary of the South Indian and Indian Glenrock Gold Mining Companies—Mr. Samuel Jennings, F.R.S., F.R.G.S.—had the advantage of considerable Indian experience (having been for 13 years resident in that country connected with the financial department of the Government of India, and also having occupied the position of vice-president of one of the agricultural societies of India) caused a wide-spread desire among capitalists embarked in Indian gold mining enterprises to learn his opinion of the position and prospects of their properties, and to ascertain whether he had any suggestions to make concerning their development. That Mr. Jennings had undertaken to give these details has already been announced in the *Mining Journal*, and the handsome little volume—"My Visit to the Gold Fields in the South-East Wynaad" (London: Chapman and Hall, Henrietta-street, Covent Garden)—of which we have been favoured with advance sheets, will satisfy every reader that the author was not only competent for the task he has undertaken, but that he has performed it admirably. To give more than an outline of each of the nine chapters into which Mr. Jennings's book is divided would be impracticable, but as the subject is one in which a large number of the readers of the *Journal* are peculiarly interested an unusually full abstract will not be out of place.

The author's destination was the Wynaad gold fields, and although few will care how he got there, the first chapter must not be passed over altogether in silence. He remarks that he had resolved to see them for himself, and to report the result of his visit to those who were interested in furthering the new industry. It must not be supposed for a moment that he was sent to prospect, as it is termed, with the view of forming any new company. His commission was simple, though it required both careful observation, patient enquiry, and some knowledge of organisation. He had no intention to paint, either in bright or in gloomy colours, the prospects of the gold companies already in the field. The primary object of his journey was to organise the staff, to introduce a proper system of accounts, and to initiate various improvements in local arrangements with a view to secure both greater efficiency and more accurate and speedy information on a variety of matters of importance. From Bombay he chose the route by rail to Madras, and thence to Mattapoli, and by mail tonga to Ootacamund, which is eight or ten hours ride from the Wynaad. The account of the journey is very interesting, but space precludes further reference to it until we come to the last stage from Neddiwattum to the mines. From this place he says the first mile or so was through the valuable cinchona plantation belonging to Government. The trees were about 20 ft. in height; they had been barked, and the stems were carefully protected with a covering of bast. After passing the plantation a magnificent panorama opens out: 3000 ft. below, extending as far as the eye can reach, the wide expanse of country extending from Mysore on the right, all over the Wynaad to the distant mountains beyond Nellumboor, and bounded on the left by the Neigherris beyond the Ochelony Valley, lies open to the view. This was his first introduction to the gold region, and one peculiarity struck him. The whole country seems broken up into countless undulations—tumbled, as it were, like the waves of the ocean. Through the centre of this rises a higher ridge, of which Needlerock Peak is the most striking feature. Towards the north the plateau seems a vast expanse of forest, but the Wynaad is not so thickly wooded. To the south there is a further steep descent to the plains. From Neddiwattum to Gudalur, the native town close under my feet in the Wynaad tableland; it is nine miles by the road, which zigzags down the face of the steep declivity. This distance may be reduced to five miles by following the bridle-path—a precipitous and rocky track, along which careful riding is an absolute necessity. Gudalur is some 2600 ft. above the sea. About a mile beyond the bazaar the road branches. Here he had some difficulty in finding out which direction to take. Luckily he discovered a native who could speak Hindustani, and from him learned which was the road to Devala, and for 12 miles more followed its course, winding through a rich hilly and well-wooded country. He passed Seeputee, and knew he was at last on one of the estates of the Indian Gold Mines Company, and that the Alpha Mine was not far off. He might, indeed, expect to see evidences before long of mining activity. But it proved that he expected too much, for he saw nothing but coffee plantations.

At Devala there is a good hotel. It has besides a few bungalows and a native bazaar; but he had still five miles further to ride. The road now became much more interesting, skirting, as it does, the very edge of the magnificent valleys that form the approaches to the Wynaad from the plains. In particular he was enchanted with the fine view down the Belcarres Valley, so full of noble timber. After passing through the Richmond estate he crossed the only bit of level country he had seen. Leaving Hadiabeta Peak and the hills beyond which Glenrock lies on the left, he rode through Rosedell, belonging to the Phoenix Company, and thence by way of St. Thomé and Wright's bungalow to the South Indian property—the Mango Tree Bungalow, 4000 ft. above the sea. Here Mr. Jennings completed his first day in the Wynaad. Since the above was written the Indian Consolidated Gold Mining Company has been formed to work the whole of these fine estates, extending all the way from Devala to Pandalur, and possessing some of the richest reefs in the district. Mr. Jennings has seen quartz from them with visible gold in it.

The South Indian estate forms the subject of the second chapter. He says that the site of Mango-Tree Bungalow, the mining captain's quarters, had been admirably chosen. It commands the whole sweep of country round, and is close to the main operations of the South Indian Company. Facing the south-west, on the left, is the high ridge of the Devala Moya estate. Nearer again, the eye glances over Richmond, Rosedell, St. Thomé; a series of rounded hills; whilst towering right in front rises the bluff head of Hadiabeta, the south-eastern side of the Glenrock Valley receding in the distance. The eye irresistibly followed the course of these far-off gently swelling plains to the sea, 70 miles away. On the right, above the opposite slope of the valley, is the tableland of Wentworth, and the country towards Cherambadi. This is about the same general level as their property, though it is broken up in a perfect sea of hills, and is set off by a background of the cloud-capped peaks of the Velery Mulla range of mountains. These push themselves some 30 or 40 miles forward into the plain, their highest points being 8000 ft. above the sea. To the north a lofty range of hills shuts out the distant view; but close below are the great heaps of quartz, indicating the entrances to the levels driven into the hillside to intersect the auriferous reefs. To the eastward we look over the South Indian estates, beyond Bittusal, away to Athikaru and Trevelyan, and the remarkable Needlerock Peak. The latter rises conical above the surrounding hills. The far distance is canopied, as it were, by the blue heights of the Neigherris. The whole, in truth, makes one magnificent panorama, which embraces nearly all the most interesting and best known gold mining sites. It is true that we cannot see the estates of the Glasgow Company. Alpha, Ham-slade, and those in the immediate neighbourhood of Devala, are hidden by the forest-crowned range of hills on the Devala Moya Company's property; whilst Tambacherry is 30 miles away to the westward.

The heaps of quartz were sure to be the first attraction, and he was soon descending the Bungalow Hill with Captain Gifford to make a closer acquaintance with the scene of his skill and labour. At the foot of the declivity the path turns off to the left. As they skirted the hill for a few hundred yards they observed the dynamite magazine, very properly sunk into the hillside in such a manner that a possible explosion could do but little damage. He should, perhaps, say that the caps are kept in store away from the dynamite. In front of the magazine a few planks led them across to the face of the opposite hill, up which they ascended through scrub and dwarf trees, till they arrived at the entrance of No. 1 tunnel. This is 43 ft. below the summit of the hill, where large boulders of quartz form the outcrop

of what is called No. 1 reef; 48 ft. have been driven east and west at this point. The direction of a reef, he here points out, is ascertained by observing the line of outcrops on the surface; but its dip can only be discovered by driving levels to intersect it at depth. In fact, no so-called reef can be properly said to have been proved until such levels have been driven or shafts sunk upon it. Nothing can be more deceptive than these heaps of quartz boulders, particularly those found on low ground. They may prove on examination to be no more than enormous masses of stone, detached ages ago from a reef, and carried to their present situation by some tremendous convulsion of nature, and subsequently, and by degrees, partly buried in the earth. There are examples in the Wynaad of the fall of a reef, and the consequent scattering of its fragments all over the adjacent country. It is needless to say that mining operations upon such detached boulders will result in nothing but disappointment. It is, he observes, in determining the direction and the dip of a true reef that the skill and experience of the mining engineer are called into play.

After noting his visit to the several tunnels and other points of operation, he remarks that others are better qualified than he to speak on such a technical subject, but he states that the quartz is very white, stained pretty freely with a reddish tinge, and moderately charged with pyrites—a metallic combination of iron, arsenic, sulphur, silver, and gold. The presence of copper also is indicated. Free gold—that is, gold uncombined with other metals—is but seldom met with. When it is found it is found, as a rule, in quartz near the surface, where atmospheric influence has been brought to bear upon the metallic deposits in the stone. Decomposition then sets in, and the metals subject to oxidation having become resolved, the precious metals, which are unaffected by the atmosphere, remain as granular, or flaky, or filmy deposits in the crevices of the rotten and honeycombed quartz, which is called gossan. Captain Gifford very frequently crushes the quartz taken from these tunnels, and states that after having washed it he almost invariably obtains colour, or a few specks of gold; quite enough to establish the auriferous character of these reefs. But assays of samples will always vary considerably, and can never be relied upon to indicate with any certainty how much profit may be calculated upon. Working in bulk alone can demonstrate the true value of the reef as a whole, and even then he strongly suspects that variations in richness will be met with. It has been declared, he remarks, that all true auriferous reefs have a direction a little west of north and east of south. If this be the general rule, the South Indian Company have here two notable exceptions. The bearing of their reefs is a trifle north of west and south of east; and they can be traced for a considerable distance across the properties. And it is more than probable that the reef at Bittusal,  $\frac{1}{4}$  mile to the east, is a continuation of that they opened out near the mango tree. If this should prove correct, he leaves his readers to calculate how long it will take to exhaust this enormous supply, even supposing that no fresh reefs can be discovered on their estates.

Referring to the Glenrock estate, which is next dealt with, Mr. Jennings says that unlike the simplicity of the mining operations upon the South Indian property, those upon Glenrock appear to be attended with unusual difficulty. The character of the ground is totally different. Instead of a bare, grassy, rounded hill, as in the former, here they have a rugged precipitous mountain side, the surface of which is completely hidden by dense jungle and overshadowing trees. But there are abundant evidences of the extent to which this part of the property has been worked in ancient times, a sure proof of the existence of rich auriferous reefs not far below the surface. Deep shafts and open trenches are met with in all directions. Ages have elapsed since last they were scenes of mining activity; for huge trees have grown in those long since deserted works, and often they are completely hidden by the tangled mass of underwood. The mining operations upon Glenrock are directed upon two points. The main levels have been driven upon reefs showing in the hill above, the hollow below the bungalow, and towards Chic Hadiabeta. Here in one place the reef shows plainly on the surface. The other operations are being carried out on the opposite side of the valley and high up the hill. This part of the property is called Glenrosa. Where the reef has been cut upon Glenrock the quartz presents a different appearance to that on the South Indian property. The lode itself appears to be more slender, and split up into numerous branches. Capt. Coward, who is in charge, spoke to him in very hopeful terms of the whole appearance of the ground. Besides the reefs already mentioned there are four others upon which operations were to be commenced at once. The first is a fine masterly vein that enters the property from the Phoenix. It appears to be about 12 ft. thick at the outcrops, has a bearing north and south, and a westerly dip of about 45°. Another new reef has been discovered a little to the west of the coffee plantations, high up the mountain side. A third appears lower down, near a stream that flows from Hadiabeta, and has much the same bearing as the above, and is about 2½ ft. wide; whilst the fourth is situated about two miles down the Glenrock river, very near the native village. These are some of the results of careful explorations made since his visit, and he doubts not are only the beginning of more important discoveries which will be made when the heavy forest has been thoroughly explored.

The reduction works, the surrounding properties, including a visit to the Indian Trevelyan, the Limerick estate, and others are referred to in the succeeding chapters, and in the seventh chapter the labour question is treated of, Mr. Jennings very truly remarking that amongst the essentials to success in gold mining in this, or, indeed, in any district, not the least important is the question of labour. There may be gold on the reefs; there may be water sufficient for driving power, and ample timber for building and other purposes, but if there is no labour procurable, or only such as is very costly, it would scarcely be possible to mine with success. An enquiry as to labour facilities should not, therefore, be overlooked. Whilst in the Wynaad his serious attention was directed to this matter, and he is satisfied that for all ordinary work, no apprehension need be felt that the supply of labour will fall short of the requirements. There is a constant flow of native labourers into the Wynaad for coffee cultivation, and these very readily take employment in every kind of surface work, though as yet not many care to undertake underground labour. Amongst the few who will do it it is exceptional to find men physically capable of the severe exertion entailed by the use of the pick upon hard rock. The native of India is naturally timid, and is also reluctant to attempt work to which he is unaccustomed. Should unexpected dangers be encountered he would in all likelihood stubbornly refuse to enter a tunnel again. This is a contingency which should be provided against. On the other hand, as has often been said of native soldiers, the men are bold and daring when well led. It follows that when encouraged by the example of good European miners they will soon gather courage and develop into useful workmen—though it must be admitted that any ordinary Cornish miner would be able to do the work of three natives. It is, therefore, a prime necessity to provide a good staff of miners, who have been accustomed to underground labour and timbering; for of this part of a miner's work the native has not the slightest idea.

It has been suggested that as Chinamen are first-rate workmen, having excellent points in their favour, it would be advantageous to encourage Chinese immigration. Under some circumstances this might be a good course to adopt. Yet he ventures to think that in Southern India it would not prove of benefit in the long run. He mentions that the system of advances which prevails in the Wynaad is not altogether satisfactory. In short, opinions differ widely as to the best mode of dealing with native labour in the matter of pay. The maître, or contractor, who receives an advance of, perhaps, 200 or 300 rupees, engaged to bring up a gang of coolies by a certain time, and keep them together. He receives a commission of 10 per cent. of the wages earned. The commission is not paid to the contractor, but placed to his credit as against the advance originally paid to him, which is thus gradually worked off. When the term for which he has contracted has been completed the account is squared, either by payment of the balance due to him or by receiving from him the balance of his advance which has not been earned by commission. He is then at liberty to enter into a fresh agreement, receiving a further advance. The pay of a first-class coolie would be 5 annas a day. A Cornish timberman would draw 16s. per month, besides the heavy expense that must be incurred in sending him out

to India. His daily wage will, therefore, be about Rs. 7, 6s., or nearly 24 times as much as that of an able-bodied native labourer. Remembering this great disproportion of cost, and taking into consideration, on the other hand, the greater advantage accruing from the employment of skilled and experienced workmen, it will readily be admitted that the interests of a mining corporation must be bound up in the encouragement and education of native labour, which, considering its abundance and cheapness, will necessarily be the best for all kinds of work, except actual operations on the solid reef. And even at such work some few of the Canarese coolies are beginning to show aptitude that promises well in the future. It is clearly, therefore, a good policy to select such men from the rest, and pay them higher wages as an encouragement. If this be done he has no doubt that in time a better class of workmen will be attracted to the mines, and so the present difficulty will disappear. Experienced European miners will always be necessary, in order to take the lead, and educate by their example the natives, who, it must be remembered, will necessarily always form the bulk of the working staff. Stress must be laid upon example. The men sent out should clearly understand that their duty will be work, and not supervision. The latter is a mistaken idea that not unfrequently possesses them.

The remaining chapters are equally interesting, but enough has been said to show the general character of the book, and to many readers it will suffice to say that Mr. Jennings has seen quite enough to convince him that the South-East Wynaad is a rich auriferous district. Time and experience will show to what extent profitable returns may be expected; actual results are anxiously awaited for. He is also able to testify that vigorous operations are being carried on upon some estates; that tunnels are being driven, machinery erected, roads made, bungalows, coolie lines, and stores are springing up in all directions—the evidences of energetic determination to accomplish whatever is to be accomplished. Experienced and capable skill is to be found there also; and not a little enthusiasm amongst mining engineers, who to a man are confident, so far as the writer has met with them. Not a single word of discouragement did he hear throughout the whole of his stay in the country. The croakers are not to be found amongst men who have seen the place. If, he says, we want them we must look here in England, where I can scarcely be believed that we have been so long in India and failed to discover the hidden treasure. Without a shadow of doubt there is gold in plenty; the work in hand is to extract the precious metal from its matrix. Concerning this most important matter a few remarks have been added—not by way of indicating how it is to be done in India, but for the purpose of warning those interested that it is yet to be decided how best to accomplish this desirable end. Science and intelligence will, doubtless, solve the question sooner or later; but full results can scarcely be hoped for so early as the sanguine expect; though even upon the first rough crushings a satisfactory return will, in all probability, be obtained.

### A NEW INVESTMENT.

By the issue of the prospectus of the Prince of Wales Slate Company to the public an opportunity is given of securing a share in a very profitable trade. The large slate quarries in North Wales, such as Dorothea, Mr. Asheton Smith's, Lord Penrhyn's, Lord Palmerston's, and Mr. Greaves's have, it is well known, yielded handsome fortunes to their owners; and whilst these properties have been kept in private hands, much surprise has been expressed by visitors to Wales that so little was known by the public of such a remunerative business. The reason of success in the instance mentioned would seem to be that these properties were acquired after the greater part of the preliminary dead work had been done by pioneers whose capital—which would if they could have continued working have been very remunerative—was exhausted.

The Prince of Wales Slate Company is in the happy position of being the purchaser of two properties in Carnarvonshire, one situated 11 miles and the other eight miles from Portmadoc, and both directly connected with that port by a line of railway constructed under the powers conferred by a special Act of Parliament. The late Mr. John Francis (for many years Lord Penrhyn's manager) had, it would seem, a high opinion of the quarries acquired by the company, and appears to have expressed his conviction that with adequate working capital they could, possessing as they do such natural advantages, be made very remunerative. Both quarries are absolutely free from rent or royalties (which item in some quarries amounts to 7s. 6d. per ton) for the remainder of the terms of the leases, which in one case is 23 years, and in the other nearly 80 years; the properties are large, the quantity of slate rock practically inexhaustible, and one feature of great advantage is that pumping or lifting machinery is required, the galleries being commanded by levels, each of which is connected with the incline, ample tip ground, as shown in the sectional view of one of the quarries prefixed to the prospectus. The advantage of this mode of working will be appreciated by those acquainted with the North Wales slate district, where continued working is both difficult and costly by reason of pumping and lifting machinery being necessary, and the deficiency of tip room.

It is understood that several of the quarries in North Wales are turning out from 20,000 to 40,000 tons of slates per annum; and the maximum make from the Prince of Wales Quarry, to which it is at present proposed to confine the company's operations, is stated in the prospectus at 10,000 tons per annum only, giving a profit of 10,000l., it would seem that the directors prefer in their estimate to err on the right side, which is not a common practice. The price paid for the property is regarded as moderate, considering the output—about 110,000l.—incurred in opening out and bringing the development work nearly to the point of completion. The slate trade is common with many others, has recently been depressed, but there appear to be indications of an improvement, and in the meantime the present is a most favourable time for quarry work, as this class of labour is comparatively cheap and plentiful. It is stated that nearly 4000 shares have been taken up by the shareholders in the former company, so that only 6000 shares are offered to the public, and these applications should be sent into the secretary not later than Aug. 8. The prospectus appears in another column.

A FINE DISCOVERY OF LEAD ORE has been made near the well-known village of Taliesin, Cardiganshire. A few yards below the high road from that place to Glandovey station a shaft has been sunk to about 8 fms., at a spot reputed, but never proved, to contain a rich vein. A gentleman obtained a grant, and unaided set to work to costean. The lode was cut, and lead ore found at the very surface. This improves as depth is attained. The lode itself is 8 in. wide, with branches of lead from 2 to 8 in. wide throughout. A good pile of ore is at the surface, and attracts considerable attention. It is some time since such a discovery has been made in the part of Wales. The proprietor proposes proving the property effectually for some time before inviting co-operation.

MR. GEORGE HENWOOD has been this week over the Court Green Mine and the Mynydd Gorrdu Mines, with some of the proprietors and Mr. George Green, of Aberystwith, to witness the action of the machinery erected thereon. They found all as near perfection as can be. The object of the visit was the adoption of similar machinery at some mines which are about to dress their ores. The inspection fully convinced them no better could be adopted. It is gratifying to find that by the use of such machinery the prospects of the mines are so improved that they will, no doubt, shortly be rendered prosperous and profitable concerns.

BEDFORD UNITED.—Sinking of the shaft on the Bridge lode progresses satisfactorily in a course of ore worth for the length of the shaft 307. per fathom, promising for the next level a large extent of unexplored ore ground. The two ends at the 20 fathoms are of value. It is stated that monthly samplings are again resumed, and will be continued, consequently it may not be necessary to carry out the resolution to dispose of the forfeited shares, as with the mine in hand and regular sales there will be sufficient funds to meet the exigencies of the mine for some time to come. With all other mining securities shares are somewhat depressed, but there are few

better investment for spare capital than this and its near neighbour, Funnislake (Clitters).

#### TREATING MIXED ORES.

The treatment of mixed ores of lead and zinc has always presented considerable difficulty, and not unfrequently mines yielding large quantities of mineral have proved unremunerative from this cause alone; but it is hoped that the invention of Messrs. COOKSON and SANDERSON, of Newcastle-on-Tyne, will render the separation comparatively easy. When treating a mixed ore containing lead with zinc, and it may be also silver and copper, they first thoroughly roast the ore, and then dissolve out the zinc by means of acetic acid. The copper, if any, will also be dissolved, and is afterwards precipitated by the addition of metallic zinc to the solution. The lead and the silver remain in the gangue, and can be separated therefrom by the usual methods for the treatment of ordinary lead ores. For the precipitation of the zinc from the acetic solution hydrogen sulphide is employed. The acetic acid can be used again and again.

When treating a mixed ore containing lead with antimony, and it may be silver, they dissolve the antimony sulphide out from the raw ore with sodium or other alkaline sulphide solution. The lead and silver, if any, remain with the gangue, and can be separated by the usual processes for the treatment of ordinary lead ores. The antimony sulphide is precipitated from the solution by the addition of sulphuric or other suitable acid. Or the solution of antimony sulphide in sodium or other alkaline sulphide obtained as above stated may be made use of in the treatment of lead zinc ore. The mixed ore containing lead with zinc is thoroughly roasted, and the zinc is dissolved out from it with sulphuric acid. To the zinc sulphate solution some of the before-named antimony sulphide solution is added and antimony sulphides precipitate, leaving a sulphate of the alkali employed in solution. The zinc sulphide can be separated from the antimony sulphide in various ways, but by preference they dissolve it out from the antimony with weak hydrochloric acid and afterwards precipitate with milk of lime.

#### ELECTRIC ILLUMINATION POPULARISED—STORAGE OF ELECTRICITY.

It is but a few weeks since that the scientific world was taken by surprise by the announcement that electricity generated in Paris and forwarded in an ordinary box like other merchandise to Edinburgh, had been there used many hours afterwards for the production of light and for other purposes with the same facility as a current from a dynamo-machine or other generator. The apparatus which enabled this to be done was a Faure's secondary battery or electric accumulator, of which a description has already been published in the Journal. That so important a discovery would be quickly turned to commercial account was generally anticipated, and already the practical application of it is regularly made in London, the stored electricity being used not only for the supply of Maxim's, Swan's, and Lane-Fox's lamps in obtaining light, but for the production of power for driving a sewing machine and other machine tools. Sir William Thomson has found that so nearly perfect is the storage in Faure's accumulator that 90 per cent. of the current which passes into it can be relied upon for subsequent distribution as desired, and it is claimed that with the accumulator a steady divided light of any intensity required can be obtained in incandescent lamps, irrespective of their resistance. At the same time electric energy can be continually produced and stored, and thus a very great saving is effected, as by the aid of the accumulator the steam-engines and the dynamo-electric machines can run without cessation during the whole 24 hours of the day. But where Faure's invention is considered to be of the greatest value is in its capability of concentrating and transporting motive power, and in its use in the place of animal and mechanical force, so that at will and at all times the required amount of power can be had for purposes of traction, and working engines of every kind throughout a town, or for ploughing, thrashing, or other agricultural purposes in the country, or for propelling vessels, barges, and boats upon the water. In fact, once the motive power being carried about in an independent form, it can be utilised for land and marine purposes wherever there is a piece of mechanism to be set in motion.

That there may be some exaggeration in the claims made is quite probable, but that Mr. Faure's system of storage is a success is beyond question, and there is an immense field for the profitable development of the invention by the company which it is understood is in course of formation for that purpose. The system has indeed much to recommend it, for it is obvious that if the generation of the current can be continued during the whole 24 hours whilst the consumption takes place during but six hours per day, one-fourth of the motive power will suffice to supply, for example, a given number of lights; hence there is some justification for the claim that the system will permit of the use and application of the immense and hitherto inefficient and almost wasted forces of wind and water for the inexpensive production of electric energy. Well may it be said that all these immense forces of nature which, by reason of their uncertainty or their distance, have either not been fully utilised or have been entirely lost, will by Mr. Faure's invention become a certain means of producing the electricity, which can be stored and be drawn upon as required for any of the above purposes. Consequently the storage of electric energy must of itself create an economic revolution, and as it can only be accomplished practically and advantageously by Faure's accumulators the proprietors of these patents must of necessity derive enormous profits therefrom. The price ranges from 87, where a single battery is required, to 47, per battery when 1000 or more are taken, and it is calculated that with 50 batteries 30 incandescent lamps, burning in a vacuum each of 10 or 12 candle power, can be illuminated for six hours. The development of the invention will be watched with much interest.

**THE YORKSHIRE RAILWAY WAGON COMPANY.**—The directors in their report for the six months ending June state that the company now owns 11,309 wagons, 24 locomotives, and 130 railway carriages. The balance of profit and loss amounts to 28357. 1s. 10d., and out of that sum the directors recommend that a dividend at the rate of 5 per cent. per annum, free of income tax, be paid, which will absorb 23617. 7s., and leave a balance of 4731. 14s. 10d. to carry to the next account.

**INSTITUTION OF MECHANICAL ENGINEERS.**—The summer meeting of the Institution of Mechanical Engineers will commence at Newcastle-on-Tyne on Tuesday, and promises to be a highly interesting one. The papers offered for reading and discussion include:—"On the Tyne, as Connected with the History of Engineering," by Mr. I. Lowthian Bell, F.R.S., of Port Clarence; "On the Progress and Development of the Marine Engine," by Mr. F. C. Marshall, of Newcastle; "On Iron and Steel as Constructive Materials for Ships," by Mr. John Price, of Jarrow; "On Printing Machinery," by Mr. John Jameson, of Newcastle; "On Some Recent Improvements in Lead Processes," by Mr. Norman C. Cookson, of Newcastle; "On Bessemer Steel Plant, with Special Reference to the Erimus Works," by Mr. C. J. Copeland, of Barrow-in-Furness; "On a Feed-Water Heater for Stationary and Locomotive Engines," by Mr. George S. Strong, of Philadelphia, U.S.; "On Slipways," by Mr. Wm. Boyd, of Walsend; and "On Compressed Air upon Tramways," by Mr. W. D. Scott-Moncrieff, of London. There will be excursions to Elswick, Newburn, and Swing Bridge, to Yarrow, down the Tyne, to Sunderland, and to Langley Barony Lead Mines, all by special trains or steamers, and every facility will be offered for inspecting the various engineering and industrial works of the district. The members will dine with Sir W. B. Armstrong, C.B., F.R.S., on Tuesday; there will be the annual summer dinner on Wednesday; on Thursday a conversation in the rooms of the Literary and Philosophical Society by invitation of the society and of the general committee (evening dress). The lecture-room and Wood Memorial Hall will be lighted by Swan's electric lamps. The Museum of the Natural History Society (adjoining) will be open, and an exhibition of microscopes will be on view. Models illustrative of the Stephenson Centenary,

&c., will also be on view. For this ladies' tickets can be obtained on application to the secretary; and on Friday the engineers and ship-builders of Sunderland give a dinner at the Queen's Hotel. Every arrangement has been made for the members to combine instruction with enjoyment, and it is hoped that the visit to Newcastle will be of mutual advantage to the town and to themselves.

#### GLIMPSES OF THE OLD CORNISH MINERS—No. II.

By JAMES QUICK,

Of the Board of Trade, London, Compiler of a "British Maritime Gazetteer," and author of papers on "Cornish China Clay," the "Cornish Pilchard Fisheries," and on various other subjects connected with Industries of Cornwall, &c., &c.

William Pryce, in his *Mineralogia Cornubiensis*, published in 1778, says, "A tinner, in the time of Richard, King of the Romans, upon some disgust at home, went over to Saxony and taught the natives to search for tin and render it merchantable." Towards the close of the 16th century Germany amply repaid her debt. For in the third year of the reign of Elizabeth "she, by the advice of her Council, invited over to England some Germans experienced in mines." (8.) In the sixth year of her reign she granted to Thomas Thurland and Daniel Houghsetter a patent giving them power to dig for metals and minerals in certain parts of England, and in the next year she granted a similar patent to William Humphrey and Christopher Shutz. These men were employed to bring over from Germany "workmen, being no enemies to the Crown," and under their direction a vast improvement was wrought in English mining affairs. The importance of the steps taken by Elizabeth with regard to English mines will be better realised when we remember with what secrecy the details of any branch of workmanship were guarded three centuries ago, for indeed the secrets of any trade or craft appear to have been so jealously preserved from intrusion as were in ancient days the Eleusinian mysteries or the Sybilline leaves. Christopher Shutz was bound under a penalty of 10,000*l.* (9) to communicate his art in working metals, and many of the improvements introduced by the Germans are traceable in Cornish mining of the present time. In the tenth year of Elizabeth's reign she formed Thurland and Houghsetter's undertaking into the Society of the Mines Royal, which claimed the direction of all mines in which silver or gold were found, and in the same year also organised the Society for the Minerals and Battery Works. And it may be noticed that the reign of Elizabeth forms a most remarkable period in the history of English mining, for not only was the industry benefited by the introduction of foreign skill and labour, but the Queen appears to have made many important concessions and regulations for the benefit of the miners and their trade; and during the latter portion of her reign the post of Lord Warden of the Stannaries of the West of England was occupied by Sir Walter Raleigh, who, as is noticed further on, became a devoted champion of the interests of Cornish miners.

The legendary goblin and fairy occupants of the earth's dark caverns and fissures, with the hidden treasures of gold and precious gems, have formed the burden and delight of many an ancient tale. But truth is stranger than fiction, and it has been aptly said the true alone is the really beautiful. The strange mysteriousness which to the other labouring classes of Cornwall and Devonshire appeared in the 15th and 16th centuries to envelope the doings of the tinner is almost as remarkable as the miners' own beliefs in the supernatural occupants of their underground workings. The dark, deep mines were regarded much in the light of Spencer's Cave of Mammon, whilst the mining body as a whole seems to have been considered by all classes as a sort of Demogorgon holding the keys of the earth's metallic treasure-house, and which all in power and beyond its spell were quite at liberty to oppress. Indeed, for some centuries, owing to causes noticed further on in this paper, the resources of the West of England miners, in spite of the privileges enjoyed by Stannary law, were frequently taxed to their utmost powers, and although the mining interest of Cornwall and Devonshire was so important to the welfare of our country, its followers were in general, as regarded worldly success, for a very long period but an unfortunate class.

From the glimpses that can be got of the individual characteristics of the Cornish miners in the 16th and 17th centuries the men appear to have been an impulsive, improvident, bold, and yet extremely superstitious and often unprincipled race, ignorant of most matters not connected with their daily calling, although the pursuit of their labours frequently necessitated the exercise of considerable ingenuity. Norden, in 1584, in his *Speculi Britannia*, describes many of the tinner as being "harsh, hard, and of an uncivil disposition, vain, litigious, much inclined to law quarrels for small causes," this last propensity being engendered probably by the facilities afforded by the old Stannary Courts, in which matters connected with mining could alone be tried. Carew confirms the view taken by Norden, and complains of the amount of time wasted by the tinner's numerous holidays, feast-days, and idle pastimes. Their favourite games of hurling and wrestling still have their followers in a few of the miners' descendants. Their old customs of dancing on May-day with their maidens around the bounding poles, or poles which marked the limits of the area in which any mine could be worked, and of decorating the poles with evergreens on St. John's-day, as well as the old game of "smashing the pitcher" (11), or of placing an earthen vessel on an eminence and breaking it into as many pieces as possible by throwing stones from a distance, together with a few other similar and frivolous pastimes, have been practised within the memory of old miners still living. And we may here mention that in Keightley's *Mythology* (vol. iii., p. 8) is noticed a queer belief in Sweden to the effect that at a certain place on St. John's-day a hill used to open, and large numbers of dwarfs used to be seen inside dancing and drinking—so that St. John's-day would appear to be a favourite one with those connected with the underground world. Tonkin, whose notes to Carew's Survey appear to have been completed in 1733 (11A) also speaks of the tinner's waste of time, and remarks of them "there are not a more subtle, sharpening, deceitful set of men of their class in the universe." Rendered fearless of real danger by constantly encountering it while wrestling the metals from mother earth, the miner was yet, as already hinted, strangely prone to a belief in any mysterious and improbable idea of nature, and not unfrequently a slave to some wild freak of a misguided imagination, such, for instance, as being awe-stricken at the idea of passing after dark an old shaft where was said to dwell some evil-disposed knocker, or dwarf, or gnome, or kobold, names by which were designated the miners' supposed evil geni or elfin-sprites, and the last of which will be recognised as of German origin. For the traces of German influence are not only visible in the material improvements that have come down to us, but also in the legends and traditions. The dwarfs or small people described in Keightley's *Mythology* as inhabiting the mines of southern Germany, and which are said to have been three-quarters of an ell long, generally old men with long beards, dressed like miners, and who amused themselves by throwing stones at the miners, who made a pretence of doing work but did none, but who were always welcome, as indicating the presence of metals by their appearance, will be recognised by our Cornish readers as corresponding in every detail with the small people or pigies so familiar to Cornishmen; and it may be noticed that no tales of Cornish pigies can be traced back earlier than the 16th century—the time when the German miners came over to this country. Many tales too of the pigies in Cornwall, both connected with mining and other matters, are almost identical with several of the stories of the German dwarfs given in Grimm's *Fairy Tales and Mythologies*.

Many traditions also of dark deeds perpetrated underground centuries ago were current very recently among the miners. There, too, might occasionally be found tales of fierce encounters with the supernatural inhabitants of the subterranean labyrinths, such, for instance, as the story of Wheel Betsy, near St. Agnes, where the spirit of an old woman known as Aunt Betsy, who had been killed by falling into the mine, was said to pursue the miners and tear the clothes from their backs (12). Demoniac howlings, too, were said to be frequently heard in the dismal passages, and the spirits were said

to kill the miners without any visible signs of hurt. Dr. Merrest, in the *Philosophical Transactions* for 1678, remarks, "The labourers tell strange stories of the sprites, or small people as they call them, and that when the damp arises from the subterranean vaults they hear strange noises, horrid knockings, and fearful hammerings." The same writer also states, "The damps render many lame, and kill others outright." From constant exposure to the damps arising from the vast quantities of mine water, through breathing impure air, and occasionally through working in high temperatures, the Cornish miner was but a short-lived person, and it is to be regretted that this state of matters even down to the present day has not been very much improved, some of the difficulties indeed being perhaps inseparable from a miner's life. Often having to work in places where his candle barely had sufficient oxygen to support combustion, it was a by no means uncommon thing for the miner to fall down at his work exhausted and insensible, and in Pettus's *Fodine Regales*, published in 1670, is recorded a strange custom in Cornwall of bringing to the surface any miner so overcome and placing him, face downwards, in a shallow hole about 6 ft. long cut in the turf, and allowing him to remain there until recovered, a mode of cure which, although doubtless somewhat novel to most of our readers, was recommended to the author of this article about two years ago for dyspeptic flatulence by an old lady resident in the neighbourhood of St. Ives!

But superstitiousness was common, though perhaps in a less degree, to the other inhabitants of the West of England as well as to the tinner, almost every craggy height or dark ravine upon the surface having its own peculiar legend to impart; and, doubtless, the miner's ordinary surroundings when not at work, and the physical features of his country, with its numerous hills, often of huge granite boulders rising into the most fantastic shapes, its fertile valleys and its awe-inspiring cliffs washed by the "ever restless sea," tended to the development of the character we are attempting to describe. The gloomy prospect of the "sun-forbidden mine," and the isolated nature of the miner's occupation, would likewise, of course, encourage the apparently almost innate proneness to superstition.

Even long since the chemical and geological sciences began to lend their help for the advancement of mining operations, the West of England miners in discovering the locality of their metal often, as may be surmised, preferred adopting the most haphazard rather than the more reasonable and practical methods of search. Sometimes, without even using the results of daily experience, they allowed themselves with characteristic superstition to be guided by the wildest freaks of the imagination, and had not Nature been most prodigal in scattering her metals through the two counties the poor miner must frequently have led himself into extreme difficulties. But our wonder at the absurdities connected with Cornish mining of two centuries ago should be greatly qualified when we remember the general state of what were regarded as scientific pursuits at that period. The Alchemists, the Spagyrist, and the Rosicrucians were then in the full enjoyment of their ridiculous tenets. The Father of Inductive Philosophy had only then appeared, whilst the majority of the foremost intellects of the time clung to a mass of odd and superstitious notions, as if under the influence of some magic power. Yet a glimpse of the strange beliefs of the bygone miners will serve both to amuse and instruct, especially when we know that a taint of the old conceits may still be found, and that even so late as 50 years ago many a miner would attribute his finding any rich metallic lode or vein to the good services of some benign pigy or fairy.

**SAFETY APPARATUS FOR MINE CAGES.**—The ordinary winding-rope instead of being fastened by fixed connections with the cage is, according to the invention of Mr. G. B. RICHARDS, of Bristol, fastened to four levers having eyes bored in their ends, which ends are respectively at the four corners of the cage. These levers are placed on each side of the wood guide rods, when such are used, and have their fulcrum near their inner ends on turned pins in the cage frame. They are free to turn about these pins downwards to an extent which is limited by stops bolted to the cage frame. A strong spiral spring is attached to the inner end of each lever, which spring when the cage is in working order is in tension. The levers are also prolonged below their fulcrum, the prolongations being formed with jagged projecting teeth. Upon the ends of the levers being let go, owing to the breaking of the raising and lowering rope or otherwise, the spiral springs by turning the levers about their respective fulcrum cause the teeth to bite into the wood guides. However slightly the teeth grip the wood guides, the weight of the cage acting at the pins or fulcrum produces a toggle action and thereby jams the cage; the harder the cage pulls the tighter it becomes jammed. Where wire guides are used he employs long sockets in place of the teeth, these sockets hanging loosely on the levers. When the levers turn about their fulcrum, owing to the winding-rope breaking, the sockets are forced against the wire guides and grip them with their whole length.

**UTILISATION OF OLD STEEL RAILS.**—The invention of Mr. R. J. Letcher, of Pontardulais, Carmarthen, has for its object the conversion of steel rails, crops, scrap, or other steel into bars suitable for the manufacture of tin or terne plates, black plates, stamping or other sheets, or rods for wire. It consists, firstly, in the steel to be used for the purpose being hammered and cut into suitable lengths (advantageously about 12 in., more or less). They are then piled and heated in a balling, puddling, or other suitable furnace, to the welding heat, and then immediately hammered under a steam-hammer into a solid piece, reheated in the furnace, and rolled into the required bars or rods. Should the bars be found to be harder than desirable for subsequent rolling into plates, &c., in the rolling-mills. He puts between the pieces of steel during the piling process, before placing them in the furnace, a certain quantity of crop ends of iron bars or plate shearings, suitably prepared, or other wrought scrap iron, which has the effect of softening the steel bars or rods without deteriorating the quality.

**SOCIAL EFFECTS OF MINING.**—Under this title an interesting article appears in Messrs. Peter Watson and Co.'s "Monthly Mining News" for July. Few of us, it is remarked with much truth, realise the vast effects which the productions of mining exercise on nearly all the occupations of life. Gold and silver have been from time immemorial the medium of exchange for all the various things which the wants of man have brought into use, or his ingenuity invented, and have been recognised as the standard of value under the form of the coinage of the world. But though gold and silver are more prized than the other metals, they do not play a more important part in the manufactured articles of the world, and this at once becomes apparent if we give the matter our serious attention. If, for instance, we ascend into the halls of the great, they teem with productions from the mines. The crown and jewels worn by royalty, the decorations of the officers and attendants, the swords and arms of the soldiers, the statues and pillars of the court, nay, the walls of the building itself, were all once mere blocks of rock or stone, or if we descend into the hut of poverty we recognise the same effect in a ruder form, or if we walk abroad the whistle of the rail tells us of the approach of the mighty engine and its appendages, the materials for which were once buried in the earth, and wrought from its depths by the skill and industry of the miner. In short, turn which way we may, we find the productions of mining in one way or another staring us in the face. . . . And if the social effects of mining are visible in the articles manufactured from the metals, they are equally apparent in the regions of the mines themselves. Let anyone visit the mines of Newcastle, and he will be astonished at the number of hands employed in raising and collecting the black diamonds, as coals are familiarly called. The whole neighbourhood owes its wealth and renown to those vast stores of fossil wood, it seems with the busy hum of a hardy and industrious race that live most part of the week in their dark abode, and only see the light of heaven on that day which has been wisely set aside for rest. . . . But if the workman gets his living from the working of mines we must remember that the lord of the soil draws his income from the royalty, as rent for mines is called, and thus derives immense riches therefrom. This is fair enough provided he does not exact too much, but, unfortunately for England, the lords who possess mines, like the owners of the surface, demand more than the lessees can afford to pay. The feudal laws, it is true, have lost many of their most objectionable features, yet many remain as so many weights in the scale against the development of our national resources.

Messrs. Bolckow, Vaughan, and Co. have secured an order for 2000 tons of steel rails from Australia. The price is stated to be 120,000*l.*

Mr. Justice Fry has appointed W. H. Fox official liquidator of the Manufacturers' Fire Insurance Company (Limited).

8.—See *Fodine Regales*, by Sir John Pettus, 1670.

9.—See *Calendar of State Papers* 1598—1601.

11.—*Brand's Antiquities*, enlarged by W. Carew Hazlitt, 1870.

11A.—And published in Lord de Dunstanville's edition of Carew's Survey, 1811.

12.—Robert Hunt, Esq., F.R.S., Keeper of Mining Records, kindly told this story to the writer.

## SALES OF COPPER ORES.

COPPER ORES SOLD AT THE CORNWALL TICKETINGS, FOR THE QUARTER ENDED JUNE 30, 1881.

Mines.	Tons.	Amount.
Mellicham	1131	3051 14 0
West Tolgus	267	1310 19 0
Botallack	110	732 11 0
East Pool	74	150 12 0
West Seta	153	836 19 6
Pendarves United	22	84 8 0
St. Aubyns United	6	27 9 0
Nicholl's Ore	1	4 5 0
Wheal Jewell	102	247 0 0
Carn Camborne	40	175 0 0
South Condurow	40	138 0 0
Wheal Comfort	21	78 15 0
Wheal Kitty	15	70 2 6
Devon Great Consols	2451	5485 10 0
South Carnon	1220	4121 1 6
Gunnislake (Clitters)	461	2622 12 0
Marke Valley	618	1497 16 6
Levant	117	820 7 6
Phoenix	35	161 17 6
Wheal Crebor	1023	3237 8 0
South Devon United	752	2234 6 6
Glasgow Caradon	190	667 6 0
Gawton	99	239 3 6
Bedford United	137	585 13 6
West Caradon	150	538 8 0
Wheal Russell	74	166 10 0
East Crebor	40	261 0 0
Holmshush	32	161 1 6
East Caradon	26	91 0 0

## COMPANIES BY WHOM THE ORES WERE PURCHASED.

Vivian and Sons	2131	£5,977 10 6
P. Grenfell and Sons	1713	5,977 19 0
Nevill, Druce, and Co.	1717	5,075 2 2
Williams, Foster, and Co.	2081	6,622 2 10
Mason and Elkington	760	2,125 17 6
Charles Lambert	1053	3,318 5 0
Total	9455	£29,798 16 0

COPPER ORES SOLD AT THE SWANSEA TICKETINGS, FOR THE QUARTER ENDING JUNE 30, 1881.

Mines.	BRITISH Tons.	Amount.
Berehaven	497	£2,836 5 0
Cambrian	52	363 6 0
Cronebane	11	505 6 0
Tigrony Precipitate	8	139 0 0
Total	568	£3,641 17 0

## COLONIAL.

Betta Cove	4093	£16,972 1 0
Moonta	106	1,363 14 0
Total	4199	£18,335 15 0

## FOREIGN.

Peruvian	179	£2,293 2 0
Virneberg	278	2,062 18 6
Caveira	377	1,828 17 0
Arendal	411	1,509 16 0
Carraedo	110	801 7 0
Garonne	173	635 15 6
Total	1528	£9,131 16 0

## RECAPITULATION.

British	568	£3,641 17 0
Colonial	4093	18,335 15 0
Foreign	1528	9,131 16 0
Sundries	346	794 4 0
Total	6641	£31,903 12 0

## COMPANIES BY WHOM THE ORES WERE PURCHASED.

Copper Mines Company	1525	£6,950 2 4
P. Grenfell and Sons	473	2,122 13 6
Nevill, Druce, and Co.	201	1,337 9 0
Vivian and Sons	606	3,675 5 0
Williams, Foster, and Co.	989	5,256 10 4
Mason and Elkington	453	1,741 10 0
Charles Lambert and Co.	1026	4,330 13 0
Landore Copper Company	1011	5,054 6 10
Cape Copper Company	352	1,435 2 0
Total	6641	£31,903 12 0

LETTS'S POPULAR ATLAS.—Parts 13 to 18 of this admirable atlas are now issued and leave no doubt that the second series will be fully equal to the first. Part 13 has five maps (the demand for a quicker issue having determined the publishers to adopt that number instead of three per month), to one of which we purpose devoting a few lines. It is the first of a 12-sheet map of the whole of India, from 92° east to 66° west longitude, and from 35° to 6° north latitude, on the bold scale of 35 miles to the inch, a scale large enough to show all the bridged roads by a distinctive colour. The physical and commercial statistics are based on the recent exhaustive volumes by Dr. W. Hunter, and the map shows at a glance the following interesting details: Cities with populations exceeding 100,000 or 500,000 are underlined respectively with a solid or broken black line, whilst towns with over 10,000 and 50,000 have blue and red dots underneath them. The new political district boundaries are coloured with a thin red line, whilst dependent and subordinate native States and main provinces are indicated by green and violet borders. Railroads in existence or constructing and telegraph lines along existing rails or across open country can equally be traced by unmistakable signs in black or colour. Canals figure of course in blue, tea plantations and important forest districts are in blue and green. A novel but intelligible system of showing the mountainous districts has been adopted which enables the names of villages and heights of principal ranges to be read without difficulty, a matter of some importance in such elevated ranges as form the mighty Himalayas. The insertion of lights along the coast is also an interesting feature to find in an atlas, but not more so possibly than many others we have pointed out as characteristics of this excellent work. The other maps of the part are one each of a beautiful six-sheet map of England and Wales, a four-sheet map of Scotland and Ireland respectively, and a four-sheet map of Canada. These all contain some novel feature never certainly offered to the public in such form and at such a price. The other parts referred to are equally well got up in every respect.

CASSELL'S PUBLICATIONS.—"Science for All," part 45, contains articles on "Some of the Wonders of Electrical Induction," by William Ackroyd; on "A Supposed New Planet," by W. F. Denning; on "A Feather," by Dr. Hans Gadow; on "The Wandering of a Pebble," by Prof. Bonney, F.R.S.; on "Ancient Horn-Shells," by Dr. Charles Callaway; and on "Locusts and Grasshoppers," by Dr. F. B. White. The "History of Protestantism," part 26, extends from the chapter on "The Image-Breakers" to that on "The Siege of Haarlem." Knight's "Dictionary of Mechanics," part 56, extends from Polarstrobometer to Printing.

COMPENSATION TO RAILWAY COMPANIES FOR SAFETY.—A novel and not unpalatable suggestion for inducing railway companies to use their most strenuous efforts to secure safety has been made by Mr. R. Varley, of Laleham, South Norwood Park, and his proposal has been submitted to the Board of Trade and the principal railway companies. He suggests that as a direct inducement to adopt the costly recommendations of the Board of Trade for the prevention of accidents the passenger duty should be remitted to those companies which for the time being worked their traffic without preventable accident. The suggestion is a good one. Railway companies are fined heavily for accidents under Lord Campbell's law of compensation. They ought, on the other hand, to be rewarded for taking additional pains and going to additional expense to ensure safety. Human nature is human nature all the world over, and it is too much to say that railway companies are unimproved by monetary considerations. On the contrary it is well-known that some of them grumble loudly at the infliction of heavy expenses involved in the application of the Board of Trade's recommendations to prevent accidents, and it may be fairly concluded that if they were rewarded for extreme safety they would be more ready to raise capital to procure the costly appliances which are calculated to prevent accidents. He maintains that the conditional remission of the Passenger Duty would tend to reduce accidents far more than any compensation charges, which in most instances are mere flea-bites. These charges average only one quarter of the Passenger Duty.

## GLAMORGANSHIRE. FREEHOLD HOUSE, LAND, AND MINERALS FOR SALE.

MESSRS. R. JONES AND SON WILL SELL BY AUCTION at the Wyndham Arms Hotel, Bridgend, on Saturday, the 13th day of August, 1881, at Two for Three o'clock, P.M., subject to conditions to be then produced, all that FREEHOLD FARM called "New House," otherwise "Ty Newydd," Bayden, containing by admeasurement 79 acres of land, more or less, whereof about 11 acres are woodland and the rest chiefly pasture, situate near Cefn Cribwr, and in the Hamlet of Bayden, in the parish of Llanganoyd, Glamorganshire, and now in the occupation of Messrs. Edward Thomas and Rees Jenkins, as yearly tenants.

The house has recently been repaired at considerable expense, and is fit for the residence of a gentleman. The minerals consist of all the same valuable seams of Coking, House, and Steam Coal, and Fireclay, as have been so extensively worked (to within half-a-mile of the property) at the Cefn Colliery, the property of C. R. M. Talbot, Esq. The Rock Vawr seam of coal, 4 ft. thick, with a capital rock roof, is got by a level on the property; and immediately below the coal is excellent fireclay that can be worked with the coal.

The property is little more than half-a-mile from the Llynvi and Ogmore Railway, by which means there is direct access to all parts of the kingdom, and the shipping port of Forthcawl is only 6 miles distant.

For further particulars, and permission to view, apply to the Auctioneers, at Bridgend; to ROBERT SOUTHERN, mining engineer, Burleigh House, Tredegar-ville, Cardiff; or to THOMAS STOCKWOOD, Solicitor, Bridgend.

**MINE FOR SALE, BY PUBLIC AUCTION.**—On Monday, the 8th August, 1881, at Nine o'clock A.M., WILL BE SOLD, BY PUBLIC AUCTION, at Lugano, Switzerland, at the Tribunal of that City, the VALUABLE SILVER AND GOLD MINE, called "C A M E R E."

Situated in the Commune of MIGLIEGLIA, formerly owned by Signori BAGLIONI and FRANZI.

The property will be put up at 100,000 fr.; deposit, 10,000 fr. Conditions of sale are to be obtained of the Advocates, CARLO BATTAGLINI, LEONE DE STOPPANI, and GIOVANNI SOLDATI, Lugano.

**TO BE SOLD,** pursuant to an Order of the High Court of Justice, Chancery Division, made in an action of JAY v. the BAGWORTH COLLIERY COMPANY (LIMITED), with the approbation of the Master of the Rolls, the Judge to whose Court the said action is attached, by GEORGE TEMPEST WADE, the person appointed by the said Judge, at the Wellington Hotel, Leicester, in the county of Leicester, on Wednesday, the 10th day of August, 1881, at Two for Three o'clock in the afternoon precisely, in One Lot, the LEASEHOLD MINING PROPERTY known as the

## BAGWORTH COLLIERY,

Adjoining Bagworth Station, on the Leicester and Burton line of Railway, comprising

TWO HUNDRED AND NINE ACRES, or thereabouts, of UNGOT COAL, with DWELLING HOUSE, COTTAGES, and the WHOLE of the FIXED and LOOSE PLANT.

Printed particulars and conditions of sale, with plan annexed, may be had gratis in London of Messrs. DRAKE, SON, and PARTON, 24, Rood-lane, Fenchurch-street, Solicitors; Messrs. PEACOCK and WALLER, 11, Grosvenor Hall Court, Fenchurch-street; and Mr. JAS. COOPER, 3, Colman-street Buildings, Public Accountant, also of the Auctioneer, Mr. GEORGE TEMPEST WADE, Horsefair-street, Leicester; and at the place of sale.

Dated this 15th day of July, 1881.

**GAREFIELD COLLIERY AND ESTATE,** comprising 1900 acres, more or less, of FREEHOLD COAL; 500 acres, more or less, of FREEHOLD FIRE-CLAY; 50 acres, more or less, of LEASEHOLD COAL; 570 acres, more or less, of LEASEHOLD FIRE-CLAY; and 530 acres, more or less, of LAND; and the MINES OF COAL under the estate of Ravenside, containing 295 acres, more or less, all situate in the parish of Rytton, in the county of Durham, will be

## OFFERED FOR SALE, BY PUBLIC AUCTION,

At Newcastle-upon-Tyne, on or about the FIRST WEEK in AUGUST, 1881.

Further particulars and information will be given in future advertisements, and can be obtained from Messrs. J. and F. ANDERSON, W.S., 48, Castle-street, Edinburgh; Messrs. J. and G. H. GEDDES, Mining Engineers, Edinburgh; Messrs. T. and R. ARMSTRONG, Land Agents, 14, Hawthorn-terrace, Newcastle-upon-Tyne; Mr. GREEN, Esq., Mining Engineer, Thorncliffe House, Baydon-on-Tyne; or Messrs. CLAYTON and GIBSON, Solicitors, Guildhall, Newcastle-upon-Tyne.

**VALUABLE AND EXTENSIVE FREEHOLD MINING PROPERTY FOR SALE,** situate in one of the RICHEST MINING DISTRICTS in the Kingdom, surrounded by Mines that have yielded enormous profits for very many years, a large number of the rich lodes of which pass through the property offered. Terms very moderate.

Would suit private parties for investment, or could with great advantage be made into one or several very attractive public companies (particularly at the present time), as there would be no rents or royalties payable on the returns—a most unusual thing—and a great saving in the working of the Mines. Reports by several of the most eminent practical authorities exceedingly favourable, which can be seen.

Add to the further particulars, Messrs. HANCOCK, SHARP, and HALES, 74, King William-street, London, E.C.

**TIN MINE TO BE DISPOSED OF,** on reasonable terms—good district, and easily worked by water power. Seven lodes discovered. Rare opportunity. Address, "A. B.," Tabb's Hotel, Redruth, Cornwall.

**THE PROPERTY OF THE IRON ORE (LIAS SUPERIOR equivalent of the CLEVELAND FORMATION) contained in several VAST GROUNDS (3000 and 650 hectares) in GERMAN LORRAINE, IS TO BE SOLD UNDERHAND.**

Detailed statement shall be handed if demanded, not anonymously, by letter, directed, free of postage, to "J. P. 513," Poste Restante, Metz (Lorraine).

## SPARE MACHINERY AND MATERIALS FOR SALE, BY

PRIVATE CONTRACT, at GOOLE PELLAS MINES, St. Ives, Cornwall.

ONE 40 in. PUMPING ENGINE, new cylinder, spring ring, &c., with or without BOILERS.

ONE 30 in. STAMPING ENGINE, wrought-iron shaft, TWO FLY-WHEELS.

ONE 24 in. WINDING ENGINE, complete; and a 22 in. ditto.

Sundry BOILERS, in first-class condition, from 11 tons down to 7 tons.

Large balance and angle bobs, nearly new; new and lofty shaft tackle; dry tubes; 200 fms. of 3/4 in. mild steel wire rope—new from maker, never used; a large quantity of pitwork, from 10 in. down to 6 in.; new plunger poles, from 10 in. down to 7 in.; strapping plates, various sizes; a large quantity 2 ft. shives; and other materials in general use in mines.

For particulars and prices, apply to Capt. BUGLEHOLE, West Providence Mines, St. Ives, Cornwall.—Dated May 2, 1881.

## RAILWAY WAGONS.

**FOR SALE,**—FIFTY SECOND-HAND 8-ton WAGONS built to a first-class specification, and now in thorough repair.

For particulars as to price, and to inspect the wagons, address "E. M.," MINING JOURNAL Office, 26, Fleet-street, London, E.C.

**FOR SALE OR HIRE,** ONE HUNDRED TO TWO HUNDRED

OR MORE 3 1/2 and 4-yard END TIP WAGONS; also several 8 in. and 13 in. cylinder TANK LOCOMOTIVES, and other CONTRACTOR'S PLANT, equal to new.

Apply, JOHN DICKSON, Jun., or A. C. BETTS, New North Works, Bootle, near Liverpool.

**FOR SALE, FORTY SHARES in MOUNT'S BAY CONSOLS**

(7s. 6d. paid), price 2s. 6d. Apply to "Alpha," Chronicle Office, Stratford-on-Avon.

## TO PROMOTERS OF COMPANIES.

**ONE OF THE MOST VALUABLE ANTIMONY SETTS** that has been offered to the public for many a long year MAY NOW BE OBTAINED. Whole rocks of the above ore can be seen at surface, weighing from 1/2 to 1 cwt., in a rock.

To treat for the same, apply to W. PAYNTER, Jun., Wadebridge.

**PAIR OF PUMPING ENGINES,** coupled, 1/2 in. centres, cylinders 13 in., stroke 24 in. Second-hand, in good condition.

Apply to JOHN CROWLEY and Co., Meadow Hall, near Sheffield.

**FOR SALE,** a 30 H.P. PORTABLE STEAM ENGINE; with link-motion reversing gear, has drum and gearing complete for winding and pumping.

A 14 H.P. PORTABLE WINDING and PUMPING ENGINE.

Also a 6 H.P. PORTABLE HOISTING ENGINE.

Apply to BARROWS AND STEWART, ENGINEERS, BANBURY.

**MR. P. S. HAMILTON** (late Chief Commissioner of Mines for the Province of Nova Scotia), PRACTICAL GEOLOGIST, MINING AGENT, and MINING ENGINEER, HALIFAX, NOVA SCOTIA.

PURCHASES and SALES of MINING PROPERTY effected, with careful regard to the interests of clients.

**MESSRS. THOMPSON AND SON, STOCKBROKERS, PLYMOUTH,** have for sale the undermentioned shares, for which offers are requested for any portion:—100 West of England Peat Company; 50 Devonport and Tiverton Brewery; 50 Tin Hill Mine; 50 Fortescue Stannagwyn; 75 Lomax, Old Well Rose, 10 per cent. div.; 25 West Pateley Bridge; 10 Roman Gravel; 75 New Penrose, 12s. 8d. paid; 50 ditto, fully paid; 50 Frongoch; and numerous others, a list of which can be had on application.

## IN THE MATTER OF THE COMPANIES' ACT, 1862, AND IN THE MATTER OF THE WEST ASHETON MINING COMPANY (LIMITED).

**NOTICE IS HEREBY GIVEN,** that a GENERAL MEETING of the Members of the said company will be HELD at No. 6, Queen-street-place, in the City of London, on MONDAY, the 15th day of August, 1881, at 2.15 o'clock in the afternoon, for the purpose of confirming the following Resolutions, which were duly passed at a Meeting of the company held on the 25th instant:—

1.—That the company shall be wound-up voluntarily, and that John Schofield, of St. Stephen's Chambers, Telegraph-street, shall be the Liquidator in such winding-up.

2.—The proposition to transfer and sell the mines, business, property, plant, machinery, stores, and effects of this company to a new company, to be called the Asheton United Mining Company (Limited), is hereby approved, and the Memorandum and Articles of Association produced to the meeting, and signed by the Chairman, are hereby approved as the intended Memorandum and Articles of Association of such new company.

3.—The Liquidator may carry out such transfer or sale as aforesaid, and may receive in compensation, or part compensation, for such transfer or sale, shares or other like interests in the Asheton United Mining Company (Limited), for the purpose of distribution among the members of this company, and may enter into other arrangements whereby members of this company may in lieu of receiving cash, shares, or such other like interests as aforesaid, or in addition thereto, participate in the profits of or receive any other benefits from the Asheton United Mining Company (Limited).

By order of the Directors, ROBERT TAYLOR, Secretary

Dated this 27th July, 1881.

## IN THE MATTER OF THE COMPANIES' ACT, 1862, AND IN THE MATTER OF THE ASHETON MINING COMPANY (LIMITED).

**NOTICE IS HEREBY GIVEN,** that a GENERAL MEETING of the Members of the said company will be HELD at No. 6, Queen-street-place, in the City of London, on MONDAY, the 15th day of August, 1881, at 2 o'clock in the afternoon, for the purpose of confirming the following Resolutions, which were duly passed at a Meeting of the company held on the 25th instant:—

1.—That the company shall be wound-up voluntarily, and that Robert Taylor, of 6, Queen-street-place, shall be the Liquidator in such winding-up.

2.—The proposition to transfer and sell the mines, business, property, plant, machinery, stores, and effects of this company to a new company, to be called the Asheton United Mining Company (Limited), is hereby approved, and the Memorandum and Articles of Association produced to the meeting, and signed by the Chairman, are hereby approved as the intended Memorandum and Articles of Association of such new company.

3.—The Liquidator may carry out such transfer or sale as aforesaid, and may receive in compensation, or part compensation, for such transfer or sale, shares or other like interests in the Asheton United Mining Company (Limited), for the purpose of distribution among the members of this company, and may enter into other arrangements whereby members of this company may in lieu of receiving cash, shares, or such other like interests as aforesaid, or in addition thereto, participate in the profits of or receive any other benefits from the Asheton United Mining Company (Limited).

By order of the Directors, ROBERT TAYLOR, Secretary.

Dated this 27th July, 1881.

## GLASGOW AND THE HIGHLANDS.

**ROYAL ROUTE VIA CRINAN AND CALEDONIAN CANALS** by Royal Mail Steamer, COLUMBA or IONA, from GLASGOW daily at A.M., and from GREENOCK at 9 A.M., conveying PASSENGERS for ORAN, OREH and WEST HIGHLANDS. Official Guide Book, 2d.; Illustrated Copies, 6d. and 1s., by post, or at Euston, t. Pancras, King's Cross Railway Bookstalls, London. Bill, with Map and Tourist Fares, free by post, from the Owner, Mr. DAVID MACBRAYNE, 119, Hope-street, Glasgow.

## TO MINING ENGINEERS.

**AN AMERICAN MINING ENGINEER,** enjoying a large practice in California, Nevada, Idaho, Utah, Colorado, Arizona, Mexico, and New Mexico, DESIRES TO EFFECT AN ARRANGEMENT with an English Mining Engineer, having an office in London, to TAKE ORDERS for the EXAMINATION OF MINES in the above-named States and Territories.

Address, ALEX. DEL MAR, 114, Gresham House, London, E.C.

## J. S. MERRY,

ASSAYER AND ANALYTICAL CHEMIST,

SWANSEA,

SUPPLIES ASSAY OFFICE REQUIREMENTS AND RE-AGENTS

**MR. CHARLES WILLIAMS, MINING ENGINEER AND SURVEYOR, DOLE HOUSE, TALIESIN, R.S.O.,** is at all times in POSITION to FURNISH CAPITALISTS with RELIABLE INFORMATION in the SELECTION OF MINING PROPERTIES in CARDIGANSHIRE AND NORTH WALES. Investors will do well to consult the above before laying out money in the districts named.

**LAS CALDAS FREEHOLD MALACHITE COPPER MINING COMPANY (LIMITED).**

Business in these Shares at close Market Prices.

Messrs. WARD AND CO., 184, PALMERSTON BUILDINGS

OLD BROAD STREET, LONDON.

**MINE "EL CACALAO,"**

GUAYANA, VENEZUELA.

COUPONS OF SHARES..... 322

Gold in bars produced in the month of June, 1881, and remitted to Messrs. Baring Brothers and Co., London, 6909-42 ozs.

DIVIDEND distributed for each coupon, \$200.

(Signed) A. J. CAGNINACCI, Vice-President.

(Signed) VICTOR J. GRILLET, Treasurer.

**LA PLATA MINING AND SMELTING COMPANY.**

Incorporated with Limited Liability under the Laws of the State of New York.

The Board of Directors have DECLARED a DIVIDEND of \$15,000

—SEVEN AND A HALF CENTS PER SHARE—out of the profits for the month of June, PAYABLE on 1st August, leaving at credit of Reserve Fund \$56,826 41 c.

F. ANDREWS, London Registrar.

21, Great Winchester-street, E.C., July 22, 1881.

**FIVE PER CENT. CUMULATIVE PREFERENCE SHARES OF**

£10 EACH, WITH PARTICIPATION IN SURPLUS PROFITS.

**THE LLYAL HALL COAL AND CLAY**

**WORKS COMPANY (LIMITED)**

INVITE APPLICATIONS FOR ONE THOUSAND SHARES, balance of the FIRST ISSUE of the above.

Allotments will be made in order of application.

Prospectuses on application to the Secretary, at the London Office, 7, Queen Victoria-street, E.C.

**BUENOS AYRES (NEW) GAS**

**COMPANY (LIMITED).**

INCORPORATED 1875.

ISSUE OF £70,000 SIX PER CENT. DEBENTURES, being balance of a total authorised issue of £200,000, secured by mortgage to trustees in London of the entire property of the company.

The Directors of the BUENOS AYRES (NEW) GAS COMPANY (LIMITED) are prepared to RECEIVE APPLICATIONS for ALLOTMENTS of the ABOVE AT PAR.

The debentures are to bearer for £100 and £50 each, repayable in 1896, with interest coupons attached, payable in London half-yearly, on 1st January and 1st July.

# NOBEL'S DYNAMITE



Manufactured and sold by

**NOBEL'S EXPLOSIVES COMPANY (LIMITED), 149, West George Street, Glasgow.**

AGENTS EXPORT: J and G THORNE, 85, GRACECHURCH STREET, LONDON, E.C.

FACTORIES--ARDEER WORKS, STEVENSTON, AYRSHIRE.

WESTQUARTER WORKS, POLMONT STATION, STIRLINGSHIRE.

## THE COTTON POWDER COMPANY (LIMITED)

RECOMMEND TO CONTRACTORS, MINERS, PIT SINKERS, QUARRYMEN, AND OTHERS, THEIR

### TONITE, OR COTTON POWDER,

AS BEING THE SAFEST, CHEAPEST, AND STRONGEST OF ALL EXPLOSIVES.

TONITE is the most efficient and economical blasting agent ever invented, and is largely in demand. It does not contain any Nitro-glycerine, and is, therefore, exempt from the dangers of exudation, or of freezing and its attendant process of thawing.

The Company also manufacture PATENT DETONATORS of a quality much superior to the foreign article. The trade supplied on favourable terms.

OFFICES:

**23, QUEEN ANNE'S GATE, LONDON, S.W.**

WORKS: FAVERSHAM, KENT.

Agents DINEEN, SON, and Co., Leeds; DAVID BURNS, Haltwhistle; R. J. CUNNACK, Helston, Cornwall; J. and W. SMITH, Chapel-en-le-Frith; W. VEITCH, Jedburgh, N.B.; W. HARRISON, Barrow-in-Furness.

## MINING MACHINERY.

### Schram's Patent Direct-acting Rock Drill, & Improved Direct-acting Air Compressor.

IMPROVED SUPPORTS FOR DRIVING, SINKING, ETC.

CONTRACTS TAKEN. MACHINES LET ON HIRE.

### SCHRAM AND OLIVER'S PATENT COAL CUTTER.

**RICHARD SCHRAM AND CO.,** ENGINEERS, 9, NORTHUMBERLAND STREET, CHANCERY CROSS, LONDON, W.C. **Messrs. OLIVER and CO., Limited,** SOLE MANUFACTURERS, BROAD OAKS IRONWORKS, CHESTERFIELD.

Also the best WINDING and HAULING ENGINES, BOILERS, PUMPS, &c., &c. GUINAL VENTILATING FANS, AIR RECEIVERS, WAGONS, PIT-HEAD STOCKS, SCHRAM'S STONE-CUTTING MACHINE, and every description of COLLIERY and MINING PLANT and CASTINGS. Illustrated Catalogues and Price Lists, and references to places where the machinery may be seen in operation, on application at 9, Northumberland-street, or at Chesterfield.

### VENTILATING TUBES AND AIR VALVES FOR MINES.



*Tubes.*



GAS, STEAM, WATER, AND GALVANIZED TUBES AND FITTINGS, PATENT LAP-WELDED IRON, AND STEEL TUBES.

For Marine and Locomotive Boilers, Hand-rails, Ship Pillars, Coils, &c.

Tubes and Fittings for all Engineering Purposes.

**TAUNTON and HAYWARD, Star Tube Works, Birmingham.**

GOLD MEDAL AWARDED, PARIS EXHIBITION 1878.

### THOMAS TURTON AND SONS,

MANUFACTURERS OF

MINING STEEL of every description.

CAST STEEL FOR TOOLS. CHISEL. SHEAR. BLISTER. & SPRING STEEL

MINING TOOLS & FILES of superior quality.

EDGE TOOLS, HAMMERS, PICKS, and all kinds of TOOLS for RAILWAYS, ENGINEERS, CONTRACTORS, and PLATELAYERS. LOCOMOTIVE ENGINE, RAILWAY CARRIAGE and WAGON SPRINGS and BUFFERS.

**SHEAF WORKS & SPRING WORKS, SHEFFIELD.**

LONDON OFFICES--90, CANNON STREET, E.C.

PARIS DEPOT--12, RUE DES ARCHIVES.

BOSTON MASS., U.S.--40, KILBY STREET.

For Excellence  
and Practical Success  
of Engines.



Represented by  
Model exhibited by  
this Firm.

### HARVEY AND CO.,

ENGINEERS AND GENERAL MERCHANTS  
HAYLE, CORNWALL

LONDON OFFICE--186, GRESHAM HOUSE, E.C.

MANUFACTURERS OF

PUMPING and other LAND ENGINES and MARINE STEAM ENGINE of the largest and most approved kinds in use, SUGAR MACHINERY MILLWORK, MINING MACHINERY, and MACHINERY IN GENERAL

SHIPBUILDERS IN WOOD AND IRON.

HUSBAND'S PATENT PNEUMATIC STAMPS

SECOND-HAND MINING MACHINERY FOR SALE, In Good Condition, at Moderate Prices--viz.

PUMPING ENGINES; WINDING ENGINES; STAMPING ENGINES STEAM CAPSTANS; ORE CRUSHERS; BOILERS and PITWORK of various sizes and descriptions; and all kinds of MATERIALS required for MINING PURPOSES.

### JOHN BEATSON & SON,

40h, St. Mary's Gate, Derby.



IRON AND STEEL RAILS, of all sections, from 10 to 86 lbs. per yard, new perfect, new slightly defective, or second-hand, with Fish-plates, Bolts and Nuts, Chairs, Spikes, and Points and Crossings to match, when required.

STEEL AND IRON WIRE ROPES, LOCOMOTIVE ENGINES, &c., &c. BARS, PLATES, SHEETS, &c.

STEEL OF ALL KINDS. PIG IRON OF ALL KINDS. Delivered at all Railway Stations and Ports in Great Britain.

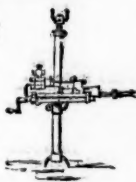
### DUNN'S

### IMPROVED ROCK DRILL.



This DRILL is GREAT STRENGTH and SIMPLICITY SECOND TO NONE IN THE KINGDOM.

We are prepared to SUPPLY our well known MACHINES at greatly REDUCED PRICES--from £35, according to calibre of cylinder



ESTIMATES GIVEN FOR PLANTS, &c., &c.

### Dunn's Patent Rock Drill Company

(LIMITED),

OFFICE,--193, GOSWELL ROAD, LONDON, E.C.

C. H. WALKER AND CO.,

MINING AGENTS AND ENGINEER, VALPARAISO AND SANTIAGO, CHILE

MEXICO, NEW MEXICO ARIZONA, UTAH, NEVADA AND CALIFORNIA.

F. M. F. CAZIN,

MINING AND CIVIL ENGINEER, At BERNALLILLO, NEW MEXICO, U.S. OF AMERICA.

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## BRITISH DIVIDEND MINES.

Shares.	Divid.	Last wk.	Clos. pr.	Total divs.	Per sh.	Last pd.
3939 Blue Hills, t, c, St. Agnes	4 6	6 3	2 3 1/2	0 4	0 0	0 2 May 1881
6000 Canon, c, Cardigan	2 0	0 2	1 2	0 0	0 0	0 2 Oct. 1878
6000 Carn Brea, c, t, Illogan	9 7	11 24	24 2 1/2	51 11	8 0	5 Apr. 1881
10240 Devon Gt. Consols, c, a, Tavistock	1 0	0 0	9 1/2	118 7	0 0	0 6 Dec. 1880
4296 Dolcoath, c, t, Camborne	10 14	10 66	64 66	121 11	3 1	0 1 May 1881
6400 East Pool, t, c, Illogan	0 9	9 38	37 37 1/2	23 17	9 1	0 1 May 1881
12500 Frozoch, c, t, Cardigan (10000 sh. iss.)	2 0	0 0	3 1/2	4 1/2	0 0	2 Jan. 1881
4 000 Glasg. Car., c, (30000 sh. £1 pd., 10000 15s. pd.)	1 1/4	0 0	3 1/2	0 13	10 0	6 Aug. 1878
8 000 Gossard and Merilyn Con., t, Flint.	2 10	0 0	3 1/2	17 18	27 6	0 0 Aug. 1877
1 000 Great Laxey, t, Isle of Man	0 6	0 0	7 1/2	7 1/2	2 18	0 0 Dec. 1880
6400 Green Hurth, t, Durham	0 6	0 0	3 1/2	0 16	4 0	1 6 July 1881
20000 Grosvenor, c, Cardigan	2 0	0 0	3 1/2	0 15	9 0	1 0 Mar. 1881
10240 Gunnislake (Clitters), t, c	2 2	0 0	3 1/2	0 15	9 0	1 0 Mar. 1881
2800 Isle of Man, t, Isle of Man	25	0 0	0 0	83 5	0 1	0 1 Sept. 1880
20000 Leadhills, t, Lanarkshire	6 0	0 0	2 1/2	13 2	0 15	0 0 3 Mar. 1878
4 000 Lisburne, t, Cardigan	18 15	0 0	0 0	609 10	0 1	0 0 June 1881
10000 Mellonear, c, Hayle	2 0	0 0	4 1/2	4 1/2	8 0	0 2 July 1881
9300 Minera Mining Co., t, Wrexham	5 0	0 0	9 1/2	9 1/2	8 0	0 1 Feb. 1881
20000 Minera Co. of Ireland, c, c, t	5 0	0 0	2 1/2	24 3	0 0	2 Jan. 1880
8000 Mona, c, Anglesea	5 0	0 0	1 1/2	8 9	0 10	0 10 July 1880
11829 North Hendre, t, Wales	2 10	0 0	6 1/2	5 1/2	3 12	6 2 May 1881
8146 Ditto	1 5	0 0	3 1/2	0 8	6 0	1 3 May 1881
2000 North Levant, t, c, St. Just	13 6	0 0	4 3	4 16	0 0	3 Feb. 1881
5000 Penhalls, t, St. Agnes	3 17	6 1/2	1 1/2	3 17	0 0	1 6 Jan. 1881
6000 Pennant, t, bar, North Wales	5 0	0 0	4 1/2	0 10	0 0	5 Mar. 1878
12090 Phoenix United, t, c, Link	5 10	3 1/2	4 1/2	17 3	0 0	6 Mar. 1880
18000 Pr. Patrick, c, t, (als. 12000 pf. 10 p.c.)	1 0	0 0	2 1/2	0 18	0 0	2 July 1878
10000 Red Rock, t, Cardigan	7 10	0 0	1 1/2	11 1/2	8 11	0 0 June 1881
12000 Roman Gravel, t, Salop	10 0	0 0	12 1/2	11 1/2	0 0	5 Feb. 1880
4000 Rhyladun, t, Wales	10 0	0 0	0 0	0 0	0 0	5 Feb. 1880
512 South Cardigan, c, St. Cleer	1 5	0 0	40 50	749 0	0 1	0 0 July 1880
6123 South Cardigan, c, St. Cleer	6 5	6 9 1/2	9 1/2	8 7	0 0	5 Apr. 1881
9000 South Danden, t, Cardigan	1 16	0 0	1 1/2	1 1/2	0 4	0 2 Apr. 1880
4500 South West Wales, t, Illogan	7 12	4 1/2	13 1/2	40 15	6 10	0 0 July 1880
11000 Tankerville Gt. Consols, t, Salop	10 0	0 0	0 0	0 16	3 0	10 Jan. 1877
6000 Throft, c, t, Pool, Illogan	11 10	0 0	16 1/2	50 13	6 0	5 Apr. 1881
15000 Van, t, Llandidloes	4 5	0 0	9 1/2	25 5	0 2	5 Feb. 1881
3000 West Wharfedale, t, Penryn	9 5	0 0	1 1/2	55 10	0 10	0 0 Feb. 1878
512 West Tolgus, c, Redruth	95 10	0 0	16 1/2	33 0	0 1	0 0 Jan. 1879
1200 West Wharfedale, c, Camborne	27 0	0 0	22 22	223 0	0 0	7 6 Apr. 1878
6000 West Basset, c, Illogan	7 0	4 1/2	14 1/2	27 12	0 0	5 July 1881
12000 Wheel Crebor, c, Tavistock	2 4	0 0	3 1/2	0 12	9 0	2 6 July 1881
1024 Wheel Eliza Consols, t, St. Austell	18 0	0 0	0 0	42 10	0 0	8 Aug. 1880
6000 Wheel Grenville, t, Camborne	15 0	0 0	8 8 1/2	0 7	6 0	2 6 Jan. 1881
4295 Wheel Kitty, t, St. Agnes	5 4	6 2	2 1/2	12 18	6 0	1 6 Jan. 1881
3000 Wheel Pevor, t, Redruth	7 11	0 0	17 14 1/2	7 13	6 0	10 Apr. 1881

## FOREIGN DIVIDEND MINES.

Shares.	Divid.	Last wk.	Clos. pr.	Total divs.	Per sh.	Last pd.
35500 Alamillos, t, Spain	2 0	0 0	1 1/2	2 2	9 0	0 9 Mar. 1881
30000 Almaden and Tinto Consol., t	1 0	0 0	3 1/2	0 6	3 0	0 1 May 1878
10000 Australian, c, South Australia	7 6	1 1/2	1 1/2	1 5	6 0	2 Oct. 1880
20000 Birdseye Creek, c, California	4 0	0 0	1 1/2	42 7	6 1	0 0 May 1881
10000 Cape Copper Mining, t, South Africa	7 0	0 0	44 44	42 7	6 1	0 0 May 1881
35000 Cesena Sulph. Co., Romagna, Italy	10 0	0 0	2 1/2	1 1	0 0	1 Aug. 1879
50000 Copiapo, c, Chili (24 shares)	3 8	0 0	2 1/2	1 13	9 0	1 May 1881
70000 English and Australian, t, c, S. Aust.	2 10	0 0	1 1/2	2 18	9 0	1 Mar. 1880
25000 Fortuna, t, Spain	2 0	0 0	4 1/2	7 17	2 0	1 Mar. 1881
60000 Frontino & Bolivia, c, New Gran.	2 0	0 0	4 1/2	0 8	0 2	0 Jan. 1881
20000 La Plata, t, Leadville	2 0	0 0	1 1/2	0 7	1 0	4 July 1881
15000 Linares, t, Spain	3 0	0 0	5 1/2	18 14	0 0	4 Mar. 1881
50000 New Quebrada, c, Venezuela	100 0	0 0	4 1/2	0 6	per cent.	0 0 July 1881
1000 Ditto, Debutura	100 0	0 0	98 101	0 6	per cent.	0 0 July 1881
3000 Oregon, c, Oregon, U.S. (pref. sh.)	4 0	0 0	6 5 1/2	0 13	3 0	4 Dec. 1880
50000 Puncilio, c, Chili	4 0	0 0	5 1/2	0 13	3 0	4 Dec. 1880
25000 Pitangui, c, Brazil (in 6000 £1 pd.)	0 10	0 0	15 13	29 17	6 0	7 Dec. 1880
10000 Pontgibaud, t, France	20 0	0 0	15 13	29 17	6 0	7 Dec. 1880
10000 Port Phillip, c, Clunes (24 shares)	1 0	0 0	1 1/2	1 14	2 0	10 Feb. 1881
50000 Richmond Consol., c, Nevada	5 0	0 0	16 17	12 1	6 0	1 June 1881
85880 Rio Tinto, c, Sp. Coup. Bds. Huella	100 0	0 0	102 102	5 per cent.	0 0	0 July 1880
125000 Santa Barbara, c, g, Brazil	0 10	0 0	2 1/2	0 11	9 0	1 June 1880
100000 Scottish-Australian Mining Co., t	1 0	0 0	1 1/2	15 p. cent.	0 0	Nov. 1880
80000 Ditto, New	0 10	0 0	1 1/2	15 p. cent.	0 0	Nov. 1880
50000 Sentein, t, c, t, Arige, France	1 0	0 0	1 1/2	0 2	0 0	2 Jan. 1880
25000 Sierra Butte, c, California	2 0	0 0	1 1/2	2 1	6 0	1 Oct. 1880
40625 Ditto, Plumas Eureka	2 0	0 0	2 1/2	2 10	0 0	3 Oct. 1880
353000 St. John del Rey (25 Stock and multiples dealt in)	205 210	0 0	43 43	6 10	2 10	0 0 June 1881
92560 Tharsis, c, t, Spain (310000 sh. 77 p. pf)	10 0	0 0	43 43	6 10	2 10	0 0 June 1881
20000 Tolima, c, Colombia	0 10	0 0	13 13	0 13	10 0	8 Feb. 1881
25000 Victoria (London), c, Australia	5 0	0 0	2 1/2	2 18	0 0	2 Aug. 1880
15000 Western Andes, c, Colombia	5 0	0 0	10 10 1/2	2 4	0 0	8 Apr. 1881
2100 W. Prussian (56000 pref. sh. £10 pd.)	10 0	0 0	10 10 1/2	2 4	0 0	8 Apr. 1881

Have made calls since last dividend was paid.

## NON-DIVIDEND BRITISH MINES.

Shares.	Divid.	Last wk.	Clos. pr.
30000 Alston United, t, Cumberland	1 0	0 0	—
12000 Assheton, t, Carnarvonshire	5 0	0 0	3 1/2
10000 Atlantic, c, t, (res. shares 28,000)	1 0	0 0	1 1/2
35000 Basset & Butler Cons., c, t, Illogan	1 0	0 0	—
11583 Bedford United, c, t, Tavistock (21 sh. iss.)	3 0	0 0	1 1/2
8000 Blackbarnbank & Gildersdale, t	0 5	0 0	3 1/2
30000 Bodidris, t, t, Denbighshire	1 0	0 0	1 1/2
30000 British, t, t, Wrexham	1 0	0 0	1 1/2
20000 Bwlch United, t, t, Cardigan	0 17	6 3	2 1/2
25000 Callington Consols, t	2 0	0 0	2 1/2
50000 Cambrian, t, c, Cardigan	2 0	0 0	—
6000 Carn Camborne, t, c, Camborne	0 8	0 0	3 1/2
6000 Carnarvon, t, c, Carnarvonshire	1 0	0 0	1 1/2
6000 Cathedral Cons., c, t, Gwynedd	0 5	0 0	1 1/2
20000 Central Fockdale, t, t, Man (21 sh.)	1 17	6 3	—
25000 Coedy-Pedw & Pant-y-Buarth, t, Mold	1 0	0 0	1 1/2
2450 Cook's Kitchen, t, Illogan	30 4	9 17 1/2	16 1/2
15500 Court Grange United, t, t	1 0	0 0	—
6400 Crook Burn, t, Cumberland	0 12	6 3	3 1/2
14000 Crosswell Mining Lands, t	1 0	0 0	1 1/2
45000 D'Esby Mountain, t, t, Llanrwst	0 10	0 0	2 3
12000 Denbighshire Consolidated, t	3 0	0 0	—
12000 Derwent, t, t, Durham	4 0	0 0	1 1/2
100000 Devon, t, t, Tavistock (151632 sh.)	0 1	0 0	4 1/2
60000 Devon Friendship, t, t, Tavistock	1 0	0 0	1 1/2
12000 Devon Great United, t, t, Tavistock	1 0	0 0	1 1/2
20000 Devonshire, t, t, Lydford	1 0	0 0	—
50000 Drakewalls, t, t, Calstock	1 0	0 0	1 1/2
10000 Dubby Syke, t, Durham	1 0	0 0	2 1/2
6000 East Blue Hills, t, St. Agnes	0 5	0 0	3 1/2
6000 East Botallack, t, St. Just	0 8	0 0	1 1/2
6144 East Cardon, c, St. Cleer	3 19	6 3	3 1/2
4000 East Chiverton, t, Perranarabuth	10 4	9 2	1 1/2
30000 E. Craven Moor, t, Pateley Bridge	1 0	0 0	3 1/2
12000 East Crebor, c, Tavistock	0 11	6 3	3 1/2
15000 East Devon Cons., c, t, Buckfastleigh	2 0	0 0	—
30000 East Herodfoot, t, t, Liskeard	1 0	0 0	1 1/2
20000 East Long Rake, t, t, Wales	1 0	0 0	—
21000 East Roman Gravel, t, t, Salop	0 15	0 0	1 1/2
18000 East Van, t, Llandidloes	0 10	0 0	—
12000 Herodfoot, t, t, Gwynedd	0 10	0 0	—
2098 East Wharfedale, t, t, Helston	15 3	6 2	1 1/2
100000 East Wharfedale, t, t, Newlyn East	1 0	0 0	—
100000 Fortescue (Stannagwyn), t, t	1 0	0 0	—
12000 Gawton, c, t, Tavistock (21 shares)	1 16	0 1	3 1/2
14000 Glenroy, t, t, Isle of Man	4 0	0 0	3 1/2
30000 Gobbett, t, t, Dartmoor	1 0	0 0	—
10000 Godevards, t, t, Carnarvon	1 0	0 0	1 1/2
25000 Godevards, t, t, St. Cleer	1 0	0 0	1 1/2
20000 Godevards, t, t, St. Cleer	1 0	0 0	1 1/2
20000 Great Dyfford, t, t, (10000 sh. issued)	1 0	0 0	1 1/2
12000 Great Holway, t, t, Flintshire	5 0	0 0	5 1/2
100000 Great Polgooth United, t, t	1 0	0 0	1 1/2
6000 Great West Chiverton, t, t, St. Agnes	0 5	0 0	3 1/2
10000 Gwyn-y-Mynydd, t, t, Flint (pref.)	4 0	0 0	1 1/2
7000 Gwydyr Amal, t, t, Carnarvon	1 0	0 0	3 1/2
6400 Harwood, t, t, Durham	1 0	0 0	—
12000 Herodfoot, t, t, near Liskeard	0 12	0 0	3 1/2
100000 Hingston, t, t, Calstock	0 12	0 0	1 1/2
20000 Kirkstall, t, t, (20000 unissued)	1 0	0 0	1 1/2
6000 Killfret, t, t, Chacewater	4 0	0 0	3 1/2
25000 Kit Hill Gt. Cons., c, t, (21 sh.)	0 15	0 0	1 1/2
15000 Lady Ann, t, t, Llanarmon	1 0	0 0	1 1/2
30000 Lady Ashburton, t, t, Callington	1 0	0 0	1 1/2
15000 Lady Bertha, t, t, Tavistock	1 0	0 0	—
2500 Levant, c, t, St. Just	11 10	0 0	1 1/2
10000 Llandegla, t, t, Wales	1 0	0 0	1 1/2
10000 Llanidloes, t, t, Cardigan	1 0	0 0	1 1/2
5120 Lovell, t, t, Wendron	0 16	0 0	1 1/2
9000 Marke Valley, c, t, Linkinhorne	6 4	6 1/2	1 1/2
6000 Medlyn Moor, t, t, Wendron	3 15	10 0	—
28000 Mid-Devon, t, t, (17000, 3d. 4d. pd.)	0 6	8 1/2	—
20000 Mona Consols, c, t, Anglesea	1 0	0 0	1 1/2
15000 Monkstoun, t, t, Devon	2 0	0 0	—
20000 Monks Consols, t, t, Flint	1 0	0 0	—
10000 Mynydd Gwladus, t, t, Cardigan	2 0	0 0	3 1/2
25000 New Tinto, t, t, (18000 issued)	2 0	0 0	—
6144 Mount Carbis, t, t, Redruth	1 0	0 0	3 1/2
2400 New Cook's Kitchen, t, t, Illogan	7 14	0 0	6 1/2
8000 New Dolcoath, t, t, Camborne	3 0	0 0	—
10000 New Holmbush, t, t, c, Callington	2 0	0 0	—
8000 New Kitty, t, t, St. Agnes	0 8	0 0	1 1/2
12000 New Penrose, t, t, c, Helston (14 sh.)	0 10	0 0	1 1/2
3000 New Tinto, t, t, Leland	0 10	0 0	3 1/2
2000 New Tinto, t, t, Wendron	0 10	0 0	3 1/2
12000 New West Cardon, c, t, Liskeard	0 1	9 1/2	3 1/2
3000 New Wheel Pevor, t, t, Redruth	0 10	0 0	2 1/2

## NON-DIVIDEND MINES—continued.

Shares.	Divid.	Last wk.	Clos.
35000 New Wye Valley, <i>t</i> , Montgomery	1 0	0 0	—
23000 North Alfred, <i>c</i> , Phillack	0 10	0 0	1 1/2
5328 North Busy, <i>t</i> , <i>c</i> , Blackwater	0 10	0 0	—
10000 N. D'Esby Mount, <i>t</i> , <i>t</i> , Carnarv.	1 0	0 0	1 1/2
12000 North Herodfoot, <i>t</i> , <i>t</i> , Liskeard	0 6	0 0	3 1/2
50000 North Molton, <i>c</i> , <i>ma</i> , <i>t</i> , Devon	1 0	0 0	—
6000 North Penstruthal, <i>t</i> , <i>c</i> , Gwynnap	1 14	6 2	—
2936 North Trekerby, <i>c</i> , <i>t</i> , St. Agnes	8 17	10 0	—
8000 Northern, <i>t</i> , <i>t</i> , Durham	1 0	0 0	1 1/2
40000 Okel Tor, <i>t</i> , <i>c</i> , <i>a</i> , Calstock	1 0	0 0	1 1/2
80000 Old Shepherds, <i>t</i> , <i>t</i> , Cornwall	0 5	0 0	—
12000 Pandora, <i>t</i> , <i>t</i> , Carnarvon	2 0	0 0	—
1112 Patry-y-Mwyn, <i>t</i> , <i>t</i> , Mold	2 0	0 0	2 1/2
45000 Pavys Corporation, <i>t</i> , <i>c</i> , Angsea	1 0	0 0	—
12000 Pateley Bridge, <i>t</i> , Yorkshire	1 0	0 0	—
6000 Pedn-an-drea, <i>t</i> , Redruth	1 17	0 0	—
12000 Pelyn Wood, <i>c</i> , Lanivry	0 5	0 0	—
6000 Pendarves United, <i>c</i> , Camborne	8 0	0 0	2 1/2
30000 Penhale and Barton, <i>t</i> , St. Columb	1 0	0 0	1 1/2
12000 Pen-y-Osredid, <i>t</i> , <i>c</i> , Flintshire	1 0	0 0	1 1/2
15000 Perran Consols, <i>c</i> , <i>s</i> , <i>t</i>	1 0	0 0	1 1/2
10000 Pioneer, <i>c</i> , <i>ma</i> , Wales	1 0	0 0	—
10000 Portcullis, <i>c</i> , Cornwall	0 12	0 0	1 1/2
10000 Port Nigel, <i>c</i> , <i>s</i> , <i>t</i> , Carnarvonshire	2 0	0 0	2 1/2
6000 Prince Royal, <i>t</i> , <i>c</i> , <i>s</i> , <i>t</i> , St. Agnes	0 11	6 0	1 1/2
12000 Prince of Wales, <i>c</i> , <i>a</i> , Calstock	0 11	6 0	1 1/2
30000 Silver Hill, <i>c</i> , Callington	0 10	0 0	1 1/2
40000 Sortridge, <i>c</i> , <i>c</i> , Horrabridge	1 0	0 0	1 1/2
50000 So. Cambrian, <i>t</i> , <i>c</i> , Cardiganshire	1 0	0 0	1 1/2
30000 South d'Eresby Mountain, <i>t</i> , <i>t</i>	1 0	0 0	—
35000 So. Devon Unit, <i>t</i> , <i>c</i> , Buckfastleigh	1 0	0 0	1 1/2
12000 South Penhale, <i>c</i> , <i>t</i> , Camborne	1 7	6 0	1 1/2
6000 South Roskear, <i>c</i> , <i>t</i> , Camborne	6 0	0 0	2 1/2
6000 South Tolarne, <i>t</i> , <i>c</i> , Camborne	4 8	6 0	2 1/2
40000 South Wheal Crebhor, <i>c</i> , <i>c</i> , Tavistock	1 0	0 0	1 1/2
2043 South Wheal Crofty, <i>c</i> , <i>t</i> , Illogan	19 7	0 0	1 1/2
4000 St. Just United, Cornwall	3 5	0 0	—
4000 Tamar, <i>s</i> , <i>t</i> , Bearnston	1 0	0 0	1 1/2
6400 Teesdale, <i>c</i> , <i>t</i> , Durlam (pref.)	1 0	0 0	1 1/2
20000 Tin Hill, <i>t</i> , St. Stephens	1 0	0 0	2 1/2
10000 Treborth, <i>c</i> , Callington	1 0	0 0	1 1/2
12000 Trebartha Lemar, <i>t</i> , <i>c</i> , Angsea	1 0	0 0	—
12000 Trevince Consols, <i>t</i> , <i>c</i> , Gwynnap	0 6	0 0	1 1/2
6000 Trugo, <i>c</i> , St. Columb	0 8	0 0	1 1/2
10000 Tyn-y-Fron, <i>t</i> , <i>c</i> , Cardiganshire	1 0	0 0	1 1/2
35000 Un. Van & Glyn, <i>t</i> , <i>t</i> , (17500 pref. sh.)	1 0	0 0	1 1/2
1000 Vaughan, <i>t</i> , <i>c</i> , Cardiganshire	10 0	0 0	—
15000 Vincent, <i>t</i> , <i>t</i> , Atharnun	1 0	0 0	1 1/2
20000 Walkham United, <i>t</i> , <i>c</i> , <i>a</i> , Tavistock	1 0	0 0	1 1/2
12000 West Abernethy, <i>c</i> , <i>t</i> , Carnarvon	1 0	0 0	2 1/2
12000 West Cardron, <i>c</i> , St. Cleer	5 9	0 0	1 1/2
3000 West Craven Moor, <i>t</i> , Pateley Bridge	0 5	0 0	1 1/2
12000 West Crebor, <i>c</i> , Tavistock	0 5	0 0	—
10240 West Devon Consols, <i>c</i> , Calstock	1 0	0 0	1 1/2
10000 West Godolphin, <i>t</i> , <i>c</i> , Breage	0 10	0 0	1 1/2
12000 West Holway, <i>t</i> , <i>c</i> , Flintshire	1 0	0 0	2 1/2
6000 West Kitly, <i>t</i> , St. Agnes	0 12	0 0	5 1/2
20000 W. Lishurue, <i>t</i> , <i>t</i> , (1 <i>l</i> . sh.) Cardigan	1 0	0 0	1 1/2
4000 West Penryn, <i>c</i> , <i>t</i> , Menheniot	1 5	0 0	1 1/2
4000 West Pateley Bridge, <i>c</i> , <i>t</i> , Breckshire	0 0	0 0	—
6000 West Polbreen, <i>t</i> , <i>c</i> , St. Agnes	0 2	0 0	1 1/2
5190 West Poldice, St. Day	5 10	0 0	5 1/2
10000 West Vor, <i>t</i> , <i>t</i> , Helston	2 0	0 0	5 1/2
2048 West Wheal Felanest, <i>t</i> , Illogan	29 6	3 1/2	12 1/2
3000 West Wheal Peavor, <i>t</i> , Redruth	2 10	6 1/2	14 1/2
12000 West Wye Valley, <i>t</i> , <i>t</i> , Montgomery	3 0	0 0	—
6000 Wheal Agra, <i>c</i> , Illogan	14 6	0 1/2	14 1/2
3000 Wheal Bassett, <i>c</i> , Illogan	5 8	0 0	4 1/2
3000 Wheal Boya, <i>t</i> , St. Agnes	0 16	0 0	2 1/2
12000 Wheal Coates United, <i>t</i> , <i>c</i> , St. Agnes	0 17	6 1/2	1 1/2
2585 W. Comf., & No. Tres., <i>t</i> , <i>c</i> , Gwynnap	2 2	0 0	3 1/2
50000 Wheal Elizabeth, <i>t</i> , <i>c</i> , Cornwall	1 0	0 0	7 1/2
5000 W. Fortune, <i>c</i> , <i>c</i> , <i>ars</i> , Harrowbarrow	1 0	0 0	—
15000 Wheal George, <i>t</i> , <i>t</i> , <i>bl</i> , Carnarvon	1 0	0 0	1 1/2
12288 Wheal Jane, <i>t</i> , Kea	1 5	8 1/2	—
12000 Wheal Jewell, <i>c</i> , St. Hilary	0 14	0 0	9 1/2
12000 W. H. H. and S. H. H., <i>s</i> , <i>t</i> , Lisk.	2 0	0 0	2 1/2
12000 Wheal Luskay, <i>t</i> , Callington	0 6	7 1/2	—
2000 Wheal Owles, <i>t</i> , St. Just	0 6	7 1/2	—
8000 Wh. Prussia, & Cardrew, <i>t</i> , <i>c</i> , <i>t</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , <i>bl</i> , 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